Paper

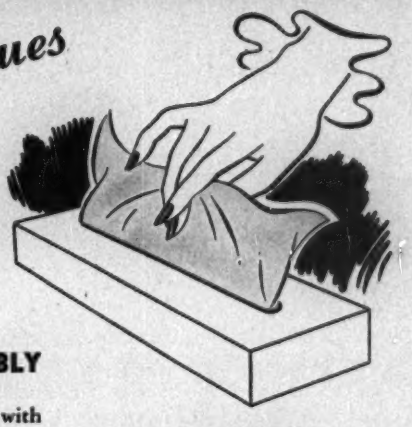
Mar. 30, 1951

CAN BANKERS BE MADE AWAKE OF FORESTRY'S VALUE?

SHOULD WASHINGTON CONTROL OUR RESOURCES?

CAN LINER BOARD STOCK PREPARATION BE IMPROVED?

For Facial Tissues



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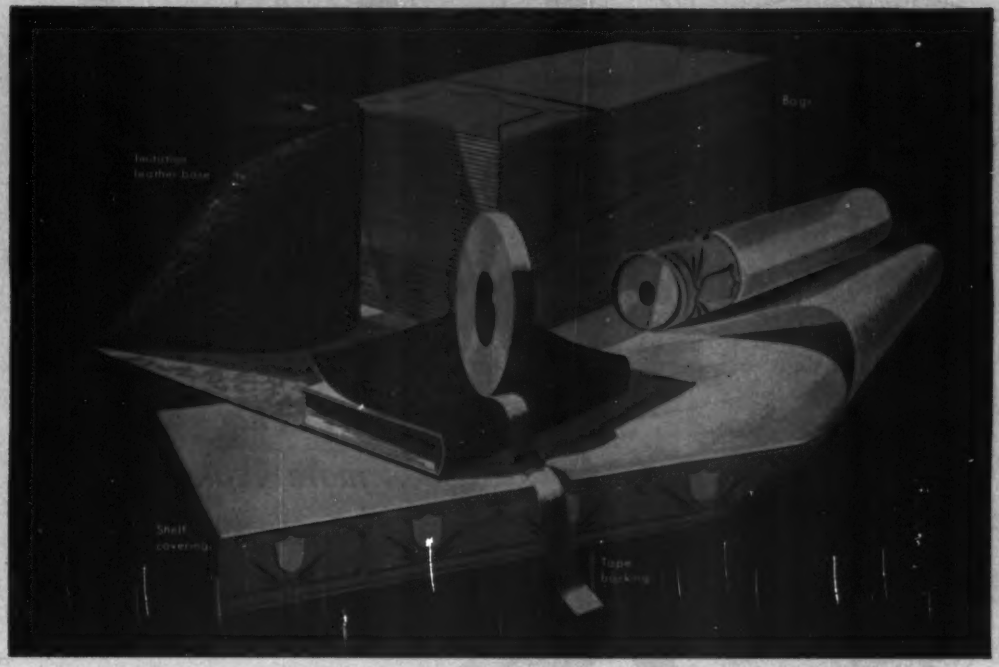

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Paper TRADE JOURNAL

Vol. 132 **MARCH 30, 1951** **No. 13**

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PUBLISHED EVERY FRIDAY

LOCKWOOD TRADE JOURNAL CO., INC., 15 West Forty-Seventh Street, New York 19

Phone: PLaza 7-2370

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ARTHUR E. GORDON, Vice-President
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HENRY J. PERRY, Editor
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E. P. McGINN, Industrial Editor
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Entered as Second Class matter at the post office at East Stroudsburg, Pa., under Act of Congress of March 3, 1879. Publication Office at Lockwood Trade Journal Co., Inc., 34 N. Crystal St., East Stroudsburg, Pa. Printed in U.S.A. Copyright 1951 by Lockwood Trade Journal Co., Inc. PAPER established Feb. 17, 1899, combined with PAPER TRADE JOURNAL, Nov. 16, 1899. PAPER established Sept. 21, 1910, combined with PAPER TRADE JOURNAL, February 19, 1926. All rights to the above titles reserved. Contents of PAPER TRADE JOURNAL, including all articles, illustrations, etc., are copyrighted and may not be reprinted except by permission. PAPER TRADE JOURNAL is indexed in Industrial Arts Index and Engineering Index. Also publisher LOCKWOOD'S Annual DIRECTORY OF THE PAPER AND ALLIED TRADES.

NEXT WEEK

An entertaining and unusual approach to an important problem will be found in "Worm's Eye View of the Sulphite Waste Liquor Problem" by William R. (Bill) Barber.

"Hot Stock Refining at St. Joe Paper Co. by C. E. Wright is a valuable description of one of the latest methods of conserving pulpwood by obtaining higher yields.

REMEMBER THESE DATES

APRIL 2-4: National Paper Trade Assn., Annual Convention, Waldorf Astoria, N. Y. C.

APRIL 20: Alumni Dinner of Syracuse University, College of Forestry, Fraunces Tavern, New York City.

APRIL 17-20: American Management Assn., 20th Nat'l. Packaging Exposition, Auditorium, Atlantic City, N. J.

APRIL 30-MAY 4: Materials Handling Conference: Held concurrently with Nat'l. Materials Handling Expo., International Amphitheatre, Chicago, Ill.

MAY 4-5: American Pulp & Paper Mill Supts. Ass'n, Northwestern Div., Spring Meeting, Radisson Hotel, Minneapolis, Minn.

MAY 7-11: Forest Products Research Society, Annual Meeting and Industry Show of 1951, Convention Hall, Philadelphia, Pa.

MAY 11-12: American Pulp & Paper Mill Supts. Ass'n., Penn. New Jersey-Delaware Div., at Hotel Easton, Easton, Penna.

MAY 13-16: American Institute of Chemical Engineers, Regional Meeting, Hotel Muehlebach, Kansas City, Mo.

JUNE 5-6: National Paper Box Mfrs. Assn., Haddon-Hall, Atlantic City, N. J.

JUNE 24-28: Superintendents National Convention, Multnomah Hotel, Portland, Ore.

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U. S. $5.00 per year— U. S. Possessions $7.00 per year.

Canada $7.00 per year—Canadian Funds acceptable.

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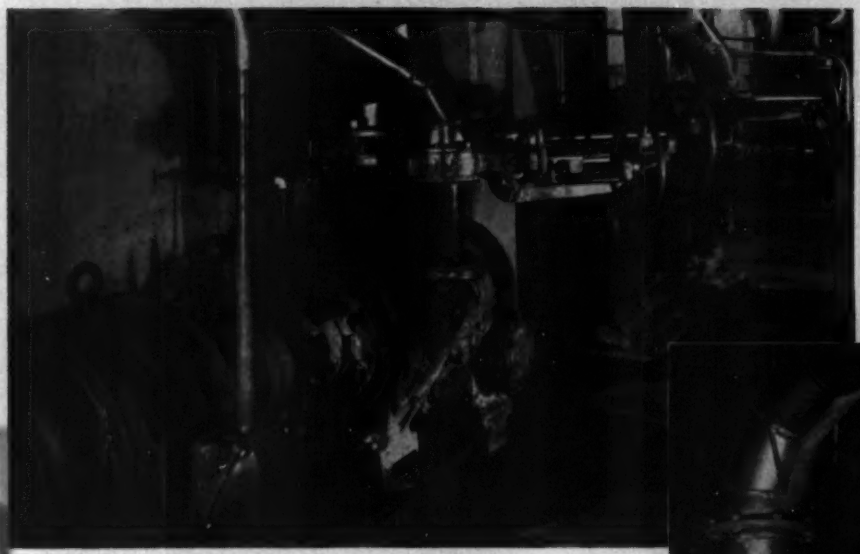

Typical horizontal agi-flo installation

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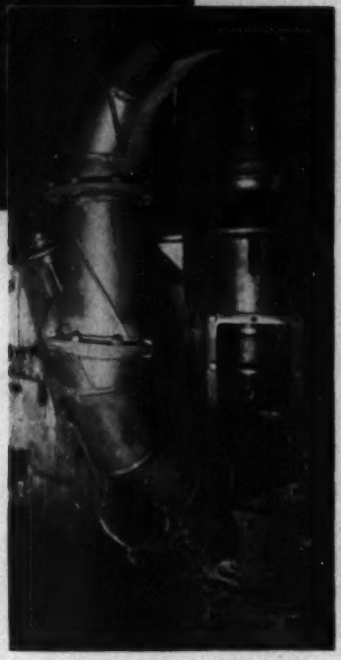
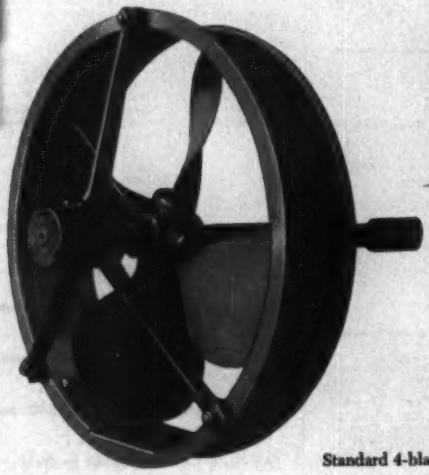


Typical vertical agi-flo installation



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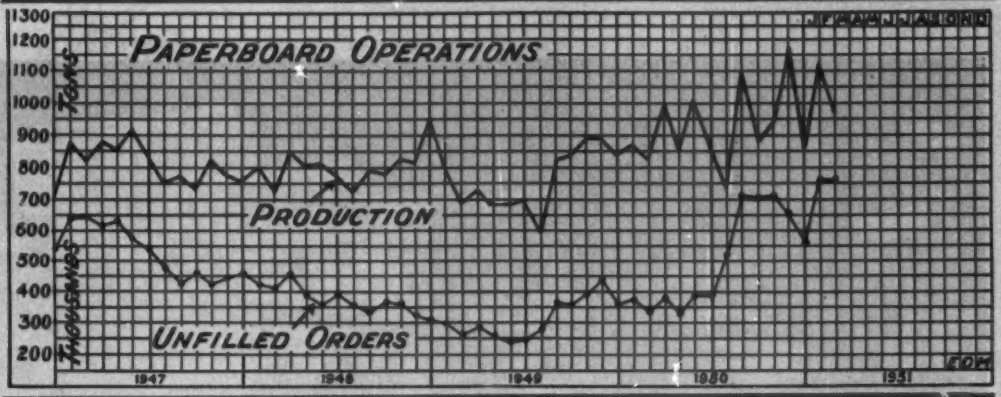

Weekly Brief of Important Figures

Source		WEEK ENDING Mar. 17, '51	Feb. 17, '51	Mar. 18, '50
APPA	Paper Production Percent Capacity[a]	103.9	102.2	96.5
	Unbl. Kraft Paper Production Percent	98.2	99.9	92.7
NPA	Paperboard Operating Ratio Percent Inch Hours	106	105	92
		Jan. 1951	**Dec. 1950**	**Jan. 1950**
APPA	Paper Production[a] (Except Newsprint and Building Papers) Tons	892,000	828,155	778,408
	New Orders Tons	936,360x	823,397	788,763
	Unfilled Orders Tons	910,835x	859,475	509,600
	Shipments Tons	885,000	841,777	765,803
		Feb. 1951	**Jan. 1951**	**Feb. 1950**
NPA	Paperboard Production Tons	977,946	1,176,679	817,000
	New Orders Tons	987,609	1,349,991	802,800
	Unfilled Orders Tons	758,562	761,828	314,600
	Our Customers Activities Index[b]	**Latest Mo.[c]**	**Previous Mo.[c]**	**Year Ago[c]**
FRS	Manufactures Total Index	225	227	189
	Durable Mfg. Index	263	266	206
	Nondurable Mfg. Index	194	196	175
	Chemical Products Index	286	286	249
	Mfg. Food Products Index	150	160	149
	Printing and Publishing Index	172	180	157
ODC	Magazine Advg.-Printer's Ink Index	319	342	326
	Retail Sales Combined Adjusted Index	364.4	343.4	299.9
	Drug Index	230.6	224.5	220.9
	General Merchandise Group Index	375.7	332.5	290.3
	Grocery and Combination Index	422.5	424.4	356.0
	Prices Index			
BLS	Consumers Price Index[d]	181.5	178.8	168.2
	Wholesale all Commodities[e]	180.0	175.3	151.5
	Wholesale Foods[e]	182.3	179.0	154.8
	Commodities other than Farm Products and Foods[e]	170.2	166.6	145.8
	Wholesale Pulp and Paper[e]	196.5	189.0	155.9
	Purchasing Power of Dollar, Consumers Prices[d]	55.1	55.9	59.5
	General Activity Index			
FRS	Mfg. Production-Worker Payroll	424.9	415.1	329.2
	Unemployment Compensation Initial Claims (M)	1,080	1,051	1,725
	Miscellaneous Carloadings–Thousands of Cars	1,498	1,814	1,240
	Electric Output (Million KW hr.)	36,726	35,779	31,677
PTJ	Average 32 P & P Common Stocks as of Mar. 20	37.39	37.98	31.92
	Average Indicated Dividends Common Stocks as of Mar. 20	2.34	2.39	2.26

[a] 1935-39=100 Unadjusted Index
[b] 1926=100
[c] New 4-7 day basis.
[d] For details see APPA Monthly Statistical Summary
[e] Latest Month Available on Request
x Revised figures.

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Paper TRADE JOURNAL

TRENDS

Office of the PAPER TRADE JOURNAL,
Wednesday, March 28, 1951

There are as many "ifs" in today's market as there are fleas on a stray mutt. And with clear thinking as short as stocks of DDT, we are assured of a continuous itch. A good wash at the right time and they may all disappear. "Hope springs eternal," particularly at Eastertime.

Granddaddy of them all is the International If. Should the Soviets spring a new offensive — perhaps in Iran, maybe a diverting action in Scandinavia, some guess at Yugoslavia—then the military program will be accelerated and probably initiate another wave of scare-buying. More of the forward-buying would take up the slack in consumer demand that is now widely recognized here and in Canada, with echoes in the United Kingdom's economy. "The trends and portents are not particularly favorable" reports a Canadian analyst.* "The deflationary forces are undoubtedly gaining strength."

Judging from the latest bracer from Washington, the administration sees Iran as the ripening olive whose oil is so important to the Soviet machine that we must be ready to strip for action. Doubtless it is to our peril that we become insensitive to danger, but if every overseas internal development is not coolly appraised, we shall find it increasingly difficult to separate the red herrings from the Bears.

Canadian writers see the Iranian coup as a direct result of our own propaganda. We have for many years "preached the liberation of various peoples so sadly exploited by foreigners (who are not Americans)," it is said. "Have we not taught the Iranian potentates with Tsarist gold, with British pounds, with German silver, and with American dollars that they have a price. . . . Why now all the surprise that somebody who was not included in the liberation spree should have listened on the radio and decided that what was sauce for the goose was undoubtedly fit condition for the gander as well?" How can Britain protest nationalization of oil or America deny self-determination? it is asked.

The Short Term Outlook

The most important single factor determining the short term outlook for economic activity are the large inventory accumulations, in the opinion of Dr. Jules Backman, Professor of Economics, New York University. "Should a peace scare develop, this situation could create a temporary curtailment of buying by consumers and some dumping of inventories by business," Dr. Backman last week told the Textile Fabrics Association.

Other significant reports in the New York area tell of peace ideas cutting into the scramble for goods, of price resistance popping up all along the line, and of inventories looking bigger and bigger in relation to sales. Distributors are being pushed to liquidate inventories at a time when consumer demand is downward.

The Federal Reserve of Cleveland reports the inventory situation at the highest level in history, and suggests it be watched carefully as any substantial let-down in general business activity might cause trouble.

Purchasing Agents Report

March 14 report of the National Association of Purchasing Agents noted that some of the pipe lines in boxboards have "begun to show signs of filling up, and some consumers who were desperate for boards during December and January now find themselves in an easier position."

Paper container inventories remain unbalanced, the NAPA found, with "a reported shortage of certain widths and weights of kraft paper, especially in the heavier classifications. Corrugated medium likewise in short supply."

West Coast markets noted local demand for most grades of paper had slackened very noticeably. "Large orders for mill shipments for future deliveries are being placed mainly as protection, but with the demand for out-of-stock deliveries considerably off. Exceptions, however, in kraft wrapping and bags, waxed paper, boxboard and boxes in which quite heavy demand exists, due to heavy government buying. (ED. NOTE: Bureau of Census report for January showed Pacific Coast inventories as highest for the country.)

MRO and DO's 97

The Purchasing Agents' report also noted that some consumers expect help in obtaining paper by the use of DO-97.

The regulation specifies that the rating may be extended to get materials to be incorporated in the products, not for inventory building, Washington states. Abuses of the DO-97 rating are being widely reported. They are being used as "hunting licenses" for materials, it is said, with paper for packaging a sore spot.

Clarification of this order which had been expected by the industry appears to be delayed for a study of its workings. Its administration is bringing out the shortages and giving a lot of complaints, says the NPA, which looks to the imposition of the CMP(Controlled Materials Plan) scheduled for July 1, for adjustment of the conditions.

More Wood Pulp Prices

To press time, not all second-quarter prices had been announced, though the limits are fairly well-defined.

Canadian unbleached sulfites range from $142.50 wet, f.o.b. to $160, with varying freight allowances; bleached sulfites, U. S. and Canadian, $135 delivered to $165, f.o.b.; bleached krafts, U. S. and Canadian, from $135 delivered, to $200 with $12.50 f.a.; unbleached krafts, domestic, $150 f.o.b. to $170, with $12.50 f.a.

Scandinavian bleached sulfites and bleached krafts move in the $250 to $295 range, on dock. Unbleached grades range from $200 for Finnish to $265 for Swedish. (See *Prices* page for details.)

A few major announcements are delayed either for clearance through the Office of Price Stabilization or for market study. Many Canadian prices are understood to be announced "subject to change without notice." Some are quoted at a delivered price, some with partial freight allowance, many on an f.o.b. basis, with title passing to the consumer either in Canada or Scandinavia. The new price-control order for imports will probably embody export trade allowances. Release is expected momentarily.

Market Briefs

Waste Paper.— Chicago convention of the NAWMD failed to bring forth the expected rollbacks in waste paper prices. Heavier supplies of bulky grades in New York area dropped *old corrugateds* by $8, *mixed* and *news* grades $5. The Boston market dropped *news* $3 to a $28/$31 range, and *old corrugateds* $7 to $40/$61. Some easing is expected in Chicago prices also. Not all dealers are included in the drops.

White Shirts.—Rollbacks in cotton cuttings prices are awaited. Supplies, however, are tight and likely to continue so in view of a reported scarcity of white shirt fabrics.

Sulfur.— Export quota for sulfur was raised by 20,000 tons to cover licenses for shipment to ECA countries. It is learned that ECA shipments are carrying DO ratings.

WASHINGTON—A 19 percent rise in February production of wood rosin, steam distilled, from output in February 1950 was reported by the Agriculture Department this week.

For the entire season to date, production of steam-distilled wood rosin is up about 22 percent from the level of the April, 1949-February, 1950 year.

Steam-distilled wood rosin stocks reported at 60,760 drums on February 28, while about 25 percent smaller than a year ago, were up almost a third for the month, said the department.

— E. P. N.

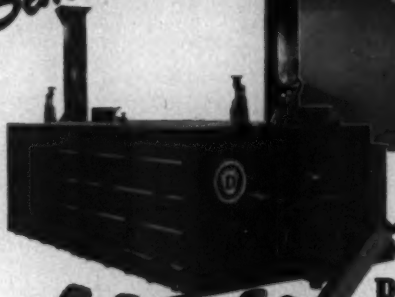
Paperboard Production (Tons)*

	Mar. 17 1951	Mar. 10 1951	Mar. 18 1950
Production	250,490	249,472	205,932
New Orders....	245,852	234,539	194,402
Unfilled Orders.	751,036	759,490	382,006

* Source: N.P.A.

* *Financial Times*, Montreal.

THEN a Better Vatman



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PROFLOW and CONFLOW VATS

The Modern Method of Board Formation

DESIGNERS AND BUILDERS OF PAPER MAKING MACHINERY SINCE 1880

Rise In Foreign Pulp Prices Imperils U.S. Paper Mills

The Office of Price Stabilization was advised by Robert H. Evans, president of the Assn. of Pulp Consumers, that hundreds of paper mills in the United States face economic strangulation as a result of increases in the cost of foreign wood pulp. These mills manufacture little or no wood pulp of their own and 60 percent of the market supply available to them is imported from Canada, Sweden, and Finland, where there are no price ceilings. During the present shortage of market wood pulp, some producers, notably in Scandinavia, are charging all that the traffic will bear, which has resulted in skyrocketing prices for pulp from overseas.

During the past week increased pulp prices have been announced by some of both the Scandinavian and Canadian pulp producers. The Scandinavian prices, already substantially higher than the corresponding Canadian and domestic prices, have been increased $50 to $125, representing a percentage rise over existing levels of from 33 to 75 percent. The Canadian price advance amounts to approximately $15 per ton and represents about a 10 percent increase over the February-March level.

Mr. Evans cited the action of the Swedish Government's own pulp mill, Kalix Mill, as a typical example of the Swedish price policy since the beginning of the Korean conflict. Last June this mill had a price of $82.50 for unbleached kraft pulp. Since then the government mill has raised the price to the United States four times, to the current price of $275 per ton, just announced for the second quarter of 1951.

Paper mills forced to purchase pulp at these prices cannot produce paper profitably at the price ceilings now prevailing.

Mr. Evans urged as a solution to this problem the establishment of reasonable price ceilings on imported pulp, an increase in paper prices to those mills which can demonstrate hardship resulting from the use of imported pulp, the allocation of adequate supplies of sulphur to domestic market pulp producers to permit maximum production, and government restrictions on the thickness of paper, equal to those imposed in World War II, so as to achieve maximum yardage from the available pulp supplies.

Comparison of Imports of Dutiable Papers and Paperboards
Calendar Year

Grade	1949 Pounds	1949 Value*	1950 Pounds	1950 % increase over 1949 pounds	1950 Value*
Printing Papers	56,513,472	$3,312,472	70,483,369	+ 25	$4,163,367
Wrapping Kraft, M.G.	1,759,236	113,921	6,416,232	+ 265	411,210
Wrapping Kraft, M.F.	5,937,463	368,792	8,354,574	+ 41	524,873
Wrapping Sulphite, M.G.	3,495,415	184,328	1,978,951	— 43	118,998
Wrapping Sulphite, M.F.	191,483	13,405	464,691	+ 143	28,053
Wrapping, Other	59,122	4,262	2,282,475	+3660	195,381
Glassine	1,425	1,615	1,007,065	+ 796	120,632
Vegetable Parchment	14,296	11,030	16,585	+ 180	15,664
Greaseproof n.s.p.f.	26,061	11,192	1,314,127	+ 475	145,316
Writing	74,038	23,318	217,828	+ 194	31,948
Drawing	37,177	18,714	62,682	+ 67	27,530
Hand Made	150,872	93,710	208,878	+ 39	106,852
Photo Basic	698,477	324,389	1,232,515	+ 76	506,192
Bristol	113,735	30,095	462,832	+ 306	78,395
Fancy Papers	74,575	67,454	626,812	+ 890	280,827
Tissue not over 6 lb.	377,505	287,366	521,217	+ 38	321,771
Tissue—Other	198,331	280,175	589,402	+ 51	348,629
Bible—6-10 lb.	11,802	9,399	4,803	— 56	5,868
Bible—10-20½ lb.	39,950	48,603	132,089	+ 228	84,866
Pulpboard Rolls for Wallboard	44,750,642	1,656,597	50,622,993	+ 13	1,883,877
Paperboards and Pulpboards	96,061,335	5,074,790	118,682,578	+ 22	5,269,035
Hanging Raw Stock	28,254	7,664	135,600	+ 382	9,905
Cigarette Paper	4,991	4,488	248,466	+4900	77,949
Decalcomania Paper	1,176,183	375,035	2,219,694	+ 97	544,031
Crepe Paper	2,694,747	239,858	905,344	— 66	84,685
Other Papers	.....	226,318	.....	....	463,441
Total Value		$12,793,170			$15,869,467

Source:—Import Committee of the American Paper Industry, February 15, 1951.
* Entered value upon which duty is assessed. Cannot be used to compute selling price.
N.B.—Weights increased generally greater than value due to currency devaluation and fluctuations.

GOVERNMENT GOSPEL

INCREASED SET-ASIDE

WASHINGTON, D.C.—NPA this week increased the set-aside of certain grades of paper to be held in reserve against government defense and defense-supporting orders, in an amendment to M-36.

In addition, NPA stated, private printing firms operating under contract with U. S. Government Printing Office will, in certain cases, be permitted to order paper stock from these special reserves established under the NPA paper order.

They may order paper from such special reserves under the following conditions: when operating under contract with GPO; when they normally obtain paper and printed matter from GPO; and third, when granted a waiver from GPO, but all such waivers must be made a part of each GPO contract or purchase order concerned, it was stated.

The latest amendment increases to 15 percent the reserve set aside by manufacturers for filling Government defense and defense supporting purposes, as concerns book and fine papers, including types for printing maps and similar materials. Special industrial paper reserves were ordered increased to 15 percent from 5 percent, and crepe wadding for packing reserves were ordered increased to 25 percent from 15.

The reserve for printing, and converting papers, paper machine coated, was cut from 10 percent to 5 percent, while the required reserve of newsprint and groundwood papers remains unchanged at 5 percent.

CHEMICAL ALLOCATION

WASHINGTON, D. C. — Acting on industry recommendations, NPA has put into effect its general chemicals order M-45, under which allocation of any scarce or critical chemical can be put in operation whenever needed.

The order is similar to WPB Order M-300, under the which chemicals were allocated in World War II, but *the current regulation does not,* by itself, *place any chemicals under allocation;* it merely provides the mechanics for allocation upon a showing of need. Furthermore, before any specific chemical is placed under allocation, NPA said the industries concerned would be fully consulted.

A continuing study of chemicals industry and supply problems is under way, said NPA, and any actual allocation will be preceded by any necessary surveys.

NPA officials pointed out that *DO rated orders* for a particular chemical *will be superseded* if such chemical is placed under allocation; also DO rated orders for MRO supplies would likewise be superseded although they would be given careful consideration in order of their importance to the general economy.

A CONGRESSMAN SAYS

The Administration elected only four short months ago is already facing a crippling shortage of manpower in its all-out war mobilization. The non-military government bureaus that ought to be reduced are actually expanding fast. Their personnel now equals the total number in the military services. The Federal civilian payroll now numbers 2,300,000, according to civil service; the total in all of our military services is about 2,500,000.

Never has any government found it necessary to maintain one civilian worker in the administrative bureaus for each man in the military service. At the employment peak of World War II, in 1943-45, there was one civilian employe on the Federal payroll for every 6 men in the armed services. Today, this ratio is roughly one for one. The politician from Jackson County, Mo., knows how to make political jobs out of a war.

Bureau expansion began with the Korean incident. In the 250 days since then — up to March 1, 1951 — the Federal agencies on the non-military side of government made war the excuse to add 266,000 persons to their civilian payrolls; an average of well over 1,000 new payrollers per day!

There are so many workers tumbling over each other in the Treasury Department, according to Congressman Porter Hardy's report for the Subcommittee on Expenditures in the Executive Department, that it costs $7.06 every time the Treasury Department makes an average purchase of $20.

The average cost in the Bureau of the Mint is $13.98 per purchase order, and in the Coast Guard it is $23.94. In the Office of Education, the personnel spend $10,293 on themselves every time they send $31,148 in Federal Aid back to the people it came from in the first place.

In the Bureau of Indian Affairs there is one civilian Federal payroller for every 30 Indians. Here the payrollers spend nearly as much of the taxpayers' money on themselves as they do on the Indians. If we taxpayers would do away with all but a necessary minimum of Federal employes, their rent, paper, travel and other expenses and just send the money direct, the Indians could all live in comparative luxury. Then the Federal employes could go produce for themselves instead of living on us.

STUDY SUPPLY DATA

WASHINGTON, D. C.—Committees on sulphur, copper, lead and zinc are currently meeting here, under the auspices of the International Materials Conference, the State Department has reported. These and similar committees for various materials, are studying international supply data on essential materials in short supply, and are to recommend measures for increasing production and insuring equitable distribution of the materials involved. Some 23 governments are collaborating on the various committees, according to the State Department.

PRICE REGULATIONS

WASHINGTON, D. C. — Preliminary proposals for a general manufacturers price regulation to operate pending issuance of special industry regulations, are under discussion between 27 representative manufacturers and the OPS.

Three main objectives are contemplated, the OPS said after the preliminary meeting; a price roll-back wherever such action is justified, to grant relief in hardship cases arising under the general freeze order of January 26, and to restore normal cost-price relationships.

Generally, OPS has explained, the proposals are intended to adjust prices on the basis of changes in manufacturing costs since the Korean war, rolling back "unwarranted" price rises not based on actual cost increases and to provide some adjustment for industries which had voluntarily avoided raising their prices meanwhile.

CREDIT REGULATIONS

OTTAWA, Ont. — Canadian Government has announced new, stiffer consumer regulations. These are not expected to affect adversely the sales of paper products across the nation.

The new consumer credit regulations call for down payments on all commodities affected by the rules to be increased from one-fifth to one-third of the cash price and the maximum period of credit to be reduced from 18 to 12 months, together with minimum size of installment payments raised to $10 or $2.50 weekly compared with $5 or $1.25 weekly in the past.

SEEK MRO EXEMPTION

WASHINGTON, D. C.—Another industry joined the growing number seeking exemption from Regulation 4, the MRO order, when representatives of the paper cup manufacturing group asked NPA this week to let them out.

They reported that while present military needs for paper cups and containers are light, industrial demands have risen with accelerated activity in that field. Current demands are being met through distribution based on a historical buying pattern and through adjustments to take care of defense industry requirements. Inventories were reported unusually low, with several members reporting they were making shipments from the production line.

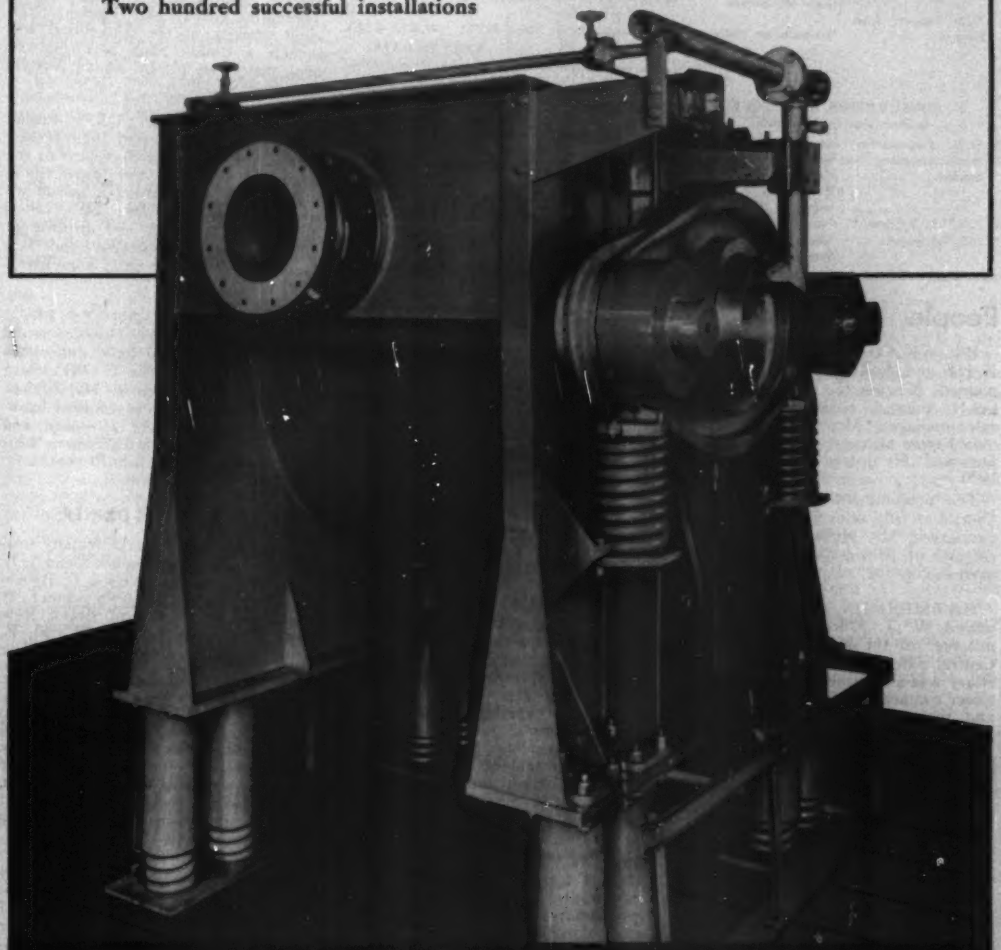
NPA officials told the meeting that possible revisions in regulations which would affect all paper products were being studied.

FOR HIGH CONSISTENCY, HIGH CAPACITY SCREENING

This is It!

The BIRD VIBROTOR SCREEN employs high frequency, circular vibration to deliver 50 to 80 tons of well screened stock per day. Consistency is 1.3 to 1.5%. Power is ⅓ HP per ton, or less.

Two hundred successful installations here and abroad testify to the effectiveness of the Vibrotor Screen. Are you fully acquainted with its possibilities for screening *your* stock? If not, better get in touch with Screening Headquarters —



BIRD MACHINE COMPANY

SOUTH WALPOLE • MASSACHUSETTS

FEBRUARY NEWSPRINT REPORT

NEWSPRINT ASSOCIATION OF CANADA, MONTREAL

I. PRODUCTION AND SHIPMENTS in short tons: 2,000 pounds		FEBRUARY 1951	FEBRUARY 1950	FEBRUARY Percent Change	YEAR TO DATE 1951	YEAR TO DATE 1950	YEAR TO DATE Percent Change
1. Canadian Production:	month and year to date	425,097	399,247	+ 6.5	878,116	816,218	+ 7.6
including Newfoundland	per working day	17,712	16,635	+ 6.5	17,598	16,591	+ 6.1
	percent of capacity	101.8	97.7		101.1	97.5	
2. Canadian Shipments:	to United States	360,908	343,857	+ 5.0	737,320	704,040	+ 4.7
including Newfoundland	to Canadian consumers	28,140	27,517	+ 2.3	56,578	56,190	+ .7
	to Other Markets	11,785	5,460	+115.8	30,278	19,617	+54.3
	total: all markets	400,833	376,834	+ 6.4	824,176	779,847	+ 5.7
3. U. S. Production:	month and year to date	84,381	69,099	+ 22.1	177,072	143,374	+23.5
4. U. S. Shipments:	to U.S. consumers	84,129	69,486	+ 21.1	176,348	144,370	+22.2
	to Other markets	767	1,270	— 39.6	1,539	2,466	—37.6
	total: all markets	84,896	70,756	+ 20.0	+177,887	146,836	+21.1
5. U. S. Imports from Europe:	*estimate; see Table 8	*13,200	12,005	+ 10.0	32,712	27,829	+17.5

II. CONSUMPTION AND STOCKS in short tons: 2,000 pounds		FEBRUARY 1951	FEBRUARY 1950	FEBRUARY Percent Change	YEAR TO DATE 1951	YEAR TO DATE 1950	YEAR TO DATE Percent Change
6. U. S. Consumption:	estimated total	429,958	435,502	+ 1.0	891,660	886,604	+ .6
7. North American Stocks:	U. S. consumers	641,344	598,442	+ 7.2	641,344	598,442	+ 7.2
	Canadian mills	143,082	157,601	— 9.2	143,082	157,601	— 9.2
	U. S. mills	7,426	7,352	+ 1.0	7,426	7,352	+ 1.0
	estimated total	791,852	763,395	+ 3.7	791,852	763,395	+ 3.7
8. A.N.P.A. Reports: 525 Newspapers	Consumption	336,568	333,159	+ 1.0	682,120	678,252	+ .6
	Stocks (tons)	442,459	435,221	+ 1.7	442,459	435,221	+ 1.7
	Stocks (days)	37	37		37	37	

People

BROWN CO., with mills at Berlin, N. H., and LaTuque, P. Q., has appointed Newton L. Nourse to the newly created position of general sales manager. Mr. Nourse was promoted from manager of the Pulp Sales Division. He joined the company in 1920.

The appointment of John J. McDonald as pulp sales manager was also announced. Mr. McDonald became an employe of Brown Co.'s Research Department in 1927.

HAMMERMILL PAPER CO. has named W. T. Eldredge district sales manager of the newly-formed South-Central Sales Territory. The new territory was established to make possible closer contact with Hammermill agents and their salesmen. It includes the following states and cities: Maryland, District of Columbia, Virginia, North Carolina, South Carolina, Tennessee (exclusive of Memphis), Kentucky, West Virginia, Columbus, Ohio, Cincinnati, Ohio, Indianapolis, Ind.

The new Hammermill territory is made up of some territory from both the Hammermill Central and Southern Sales Territories. R. F. McMahon continues as district sales manager for the Southern Sales Territory but will move his headquarters from Erie to Dallas, Texas, when proper office facilities have been found in the latter city. In the Central Territory, H. R. Landers continues as district sales manager. Working with Mr. Landers is H. B. Wilson, assistant district sales manager. Headquarters for the Central Territory and the South-Central Territory are at the Hammermill plant, Erie, Pa.

ST. REGIS PAPER CO. announces the transfer of Hugh W. Sloan, vice-president of St. Regis Sales Corp. and presently Pacific Coast manager of the company's Multiwall Bag Division, to the New York office, effective April 2, 1951. Mr. Sloan will assist Arch Carswell, vice-president of the company and general sales manager for the division, in the direction of bag sales. Robin G. Swain, production manager of the company's West Coast bag plants, will succeed Mr. Sloan as Pacific Coast manager.

BULKLEY, DUNTON & CO.'S Fine Paper Department has announced the appointment of Don L. Taranto to the sales staff. Formerly associated with the Rochester Paper Co., Mr. Taranto has had wide experience in the graphic arts field and is intimately familiar with the paper buyer's problems. This familiarity combined with his knowledge of the manufacturing end of the paper business make him a valuable addition to Bulkley-Dunton's sales staff.

KENNETH T. GREENLEAF, vice-president and sales manager of H. G. Craig & Co., Inc., pulp and paper mill representatives, has been elected president to replace the late Alvah L. Miller. Mr. Greenleaf has been connected with the company since 1933, previous to which time he was active in the newspaper publishing field. . . . FRANK L. A. CARTER, secretary of the company, was elected vice-president. He also retains his position as secretary. Mr. Carter has been a member of the organization for the past thirty years. . . . ELMORE A. STEFFAN, who has been cashier of the company since 1947, was elected treasurer.

SEALRIGHT CO., INC., delegation to NPTA convention, New York, will be: John Dolphin, sales vice-president; Reid McNamara, sales manager; J. R. Murray, assistant branch manager, in charge of sales, Kansas City; Chester Rondomanski, sales promotion manager; and district managers: Flavel Payne, New England; Everett Freud, New York; John LeMessurier, New York, Pennsylvania, West Virginia; Gordon Phillips, Philadelphia; James Sheek, Southeastern States; Charles Thompson, Great Lakes Region. Sealright activity at the convention will include a Coffee Shop featuring the new, taste-free, plastic coated Nestyle container.

ECUSTA PAPER CORP., Pisgah Forest, N. C., has elected John Wesley Hanes, former Under Secretary of the Treasury, president and board chairman of the corporation, a subsidiary of Olin Industries, Inc. Mr. Hanes, also a vice-president and director of Olin Industries, succeeds the late Harry H. Strauss at chief administrative officer.

DOESKIN PRODUCTS, INC., manufacturers of the Doeskin brand tissues and napkins, have announced the election of Milton C. Zaidenberg to the board of directors. Mr. Zaidenberg has been in the investment banking business for over 25 years, and has been associated with Simons Linburn throughout the last 10 years.

SYRACUSE ALUMNI DINNER

Alumni of Syracuse University College of Forestry will honor Dean J. L. Illick and Professor Nelson C. Brown on April 20, 1951, at a dinner at Fraunces Tavern, Broad street, New York City. R.S.V.P. $3.00. R. E. Broderick, 271 Madison avenue, New York City.

JAPANESE VISITORS

Yoshizo Shimamura, president, and M. Ohyama, chief engineer, of the Kokusaku Pulp Industry Co., Ltd., 8 1-Chome, Yuraku-Cho, Chiyoda-Ku, Tokyo, Japan, stopped in the office of *Paper Trade Journal* during their trip around the world. They are contacting machinery manufacturers to arrange for the purchase of machinery and equipment to expand their present mills and also with the prospect of building a new mill within the near future. They are also contacting manufacturers of dissolving pulp in order to obtain additional supplies of this material for use in their viscose rayon plants. Mr. Shimamura and Mr. Ohyama plan to go to Montreal and visit several Canadian mills and then proceed to the West Coast.

Stock Preparation in the Manufacture of Liner Board*

W. C. HAYES[1]

The National Container Corporation, Kraft Pulp & Board Division, has had quite a bit of practical experience with stock preparation with Jordans and refiners. I am not going into any boring details but will try to present the facts as this experience portrayed them.—(AUTHOR'S NOTE).

The kraft pulp and paper mill at Jacksonville, Fla., was started in the latter part of March 1938, at which time there were eight Jordans driven by 350 Hp, 400 RPM, synchronous motors. As you will note in *Figure 1*, these Jordans were operated in parallel series, through 1 and 2, then through 3 and 4 to the machine chest. These Jordans were what we call hydrating Jordans; they had ¾" bars in the plug and ¼" bars in the shell filling.

The stock was then picked up from the machine chest going through the next four parallel series, or through 7 and 8 parallel, then through 6 and 5 parallel to the primary stock-control box with the overflow going back to the machine chest.

We operated this way through the years of 1938, '39, '40, and '41. We ran these Jordans fully loaded; 90 amps most of the time and our highest production was 274 tons per day.

Under these conditions the total power demand on the Jordans was 2600 KW per hour, which would give us 9.7 KW days per ton for refining. The weight ran from 41 pounds to 43 pounds during this time and our mullen varied from 99 to 102. We had a very high tear, over 400; both in the machine direction and the cross direction. We were quite frequently overloading the motors on the Jordans at that time trying to increase production or improve quality. In 1942 we tried to alleviate this condition by installing the ninth Jordan.

This Jordan was designated as No. 9, which you will note in *Figure 2*. The stock was run the same way as before in a parallel series arrangement, with the last three Jordans, 7, 8, and 9 parallel, then going parallel through 5 and 6 directly to the primary stock control box. The overflow going back to the machine chest. We ran this way through years 1942 to 1946, as

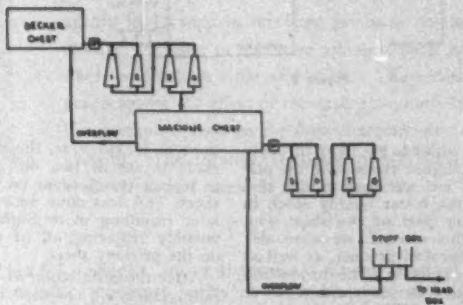


Figure 1

well as the better part of 1947. Our highest production in these years was 303 tons per day. At this time we were running all of the Jordans fully loading pulling 2993 KW per hour. Under these conditions it required 9.8 KW per ton day for refining. Our power requirements and daily tonnage remained about the same from 1942 to 1947 in KW per ton day varying from 9.7 to 9.8 for refining. To us, this seemed to be a lot of power for this operation; especially since we were short on generating capacity. It was at this time that we were compelled to increase production and improve quality, but to do so presented two problems. (1) We did not have the room for more Jordans. (2) We did not have the electric generating capacity in the power house. It was then that we became interested in the Sutherland refiners and decided to buy and install two of the 42" units. These were to be installed in the place then occupied by No. 9 Jordan. It was also decided to install a secondary head box for the Fourdrinier machine, and use the refined stock from the Sutherlands on the top sheet. All of this was done with the idea of improving quality and to find out how much production could be increased.

As you will note in *Figure 3*, No. 9 Jordan was replaced with the two 42" Sutherlands for the secondary head box; we got the two 42" Sutherlands and the secondary head box in operation in October 1947. The primary sheet was run through the eight Jordans same as previously, only after a short while we backed off on the Jor-

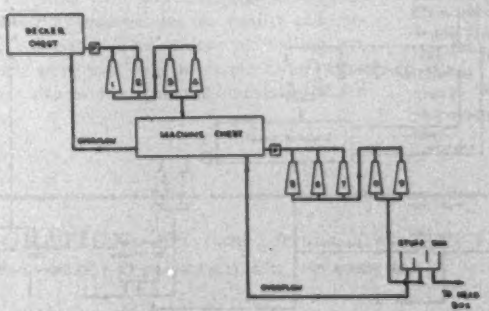


Figure 2

[1] Paper Mill Supt., National Container Corp., Jacksonville, Fla.

* Presented at a joint meeting of the Southeaster-Southern Division of the American Pulp & Paper Mill Superintendents Assn. in Asheville, N. C., October 12-14, 1950.

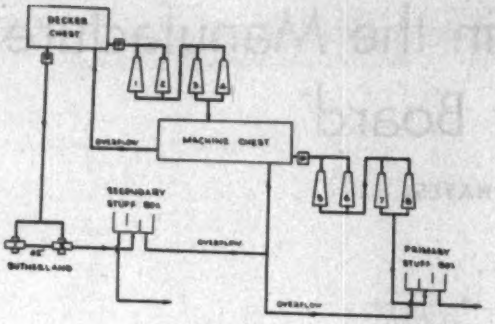


Figure 3

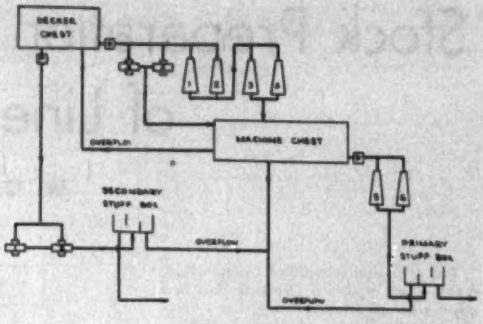


Figure 4

dan plugs in order to get more through. This gave a higher freeness in the primary sheet, but we could afford this because of the better quality stock in the secondary part of the sheet. Operating in this manner, we were able to get an improved product, as well as increased production. The production rose to 321 tons per day, with a power requirement of 3178 KW per hour. This amounted to 9.9 KW days per ton for stock preparation, which was quite an improvement in production over our previous set-up. The increase in production was a great incentive for changing to Sutherlands; but before we did this, the Jordan manufacturers were called in for their recommendations, to see if the fillings could be changed to give us results similar to those obtained with the disc refiners. The Jordan manufacturers recommended that we put in No. 10 bar filling in the plug and 3/16" bars in the shell filling. We found the life of this filling very short, and we were also disappointed in the results achieved as there was no saving in power and no apparent improvement in the board quality. Consequently, we made no further changes along this line. Because of the results obtained with the two 42" Sutherlands, and the failure of the attempt to improve the Jordans, together with the need of Jordans in our other mills, and our power limitations at Jacksonville, the decision was made to install two 48" Sutherlands to replace two Jordans on the primary sheet. This was done with the idea of later installing more Sutherlands and possibly replacing all of the Jordans on the primary sheet.

After the installation of the two 48" Sutherlands, we operated with the refiners and Jordans connected as shown in *Figure 4*. Nos. 1, 2, 3, and 4 Jordans arranged in parallel series discharging directly into the machine chest along with Nos. 3 and 4 Sutherlands in parallel. At this time we were pumping from the machine chest directly to the primary fan pump through Nos. 5 and 6 Jordans. To make room for this installation, Nos. 8 and 7 Jordans were removed. This method of operating was very unsatisfactory for the simple reason that an hour or more was required to obtain a change in the refining of stock to the primary sheet, as 14 to 15 tons of production of refined stock was stored in the machine chest. If this stock was refined too much or not enough, it still had to go to the paper machine.

Of course, at this time Nos. 5 and 6 Jordans were connected so that the stock to the machine had to pass through them, and if the stock in the machine chest was too free it could be touched up, but if it was too slow then the results were poor quality board. We also found that when trying to operate No. 5 and 6 Jordans on already refined stock, the cutting action was harmful to the quality of the sheet. In other words, at times we would have a very good sheet and with no change whatsoever being made back in the machine or stock preparation the sheet would change. This was probably due to insufficient control of the stock preparation but was made worse by having too much ahead. With this set-up, we reached a high production of 352 tons on 44 lb. Our best mullen was 104 and we still had a very good tear, both machine direction and cross direction being over 400. About this same time we began to observe what we call reversion. I do not know whether others in the industry have noticed this or not. We thought that it could possibly be due to the blend of stock, but found out later that you could have it most any time; if you were checking for it. In other words, we had a very good mullen test when it was taken off the reel and two days later the mullen test would drop as much as 15 points. On our peak day with this operation, we made 352 tons using six Jordans and four Sutherlands. We were using a total of 3078 KW per hour, or equivalent to 8.7 KW days per ton for refining. While this change did not yield much saving in

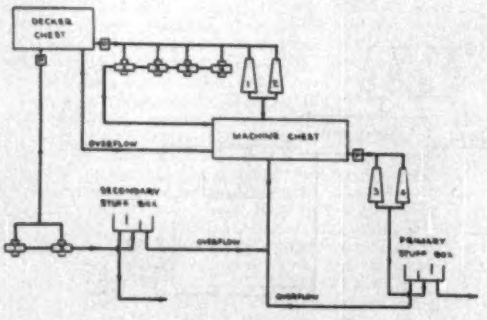


Figure 5

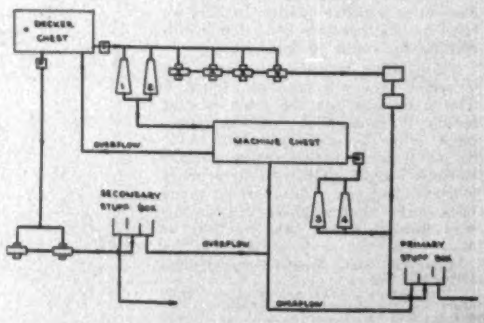
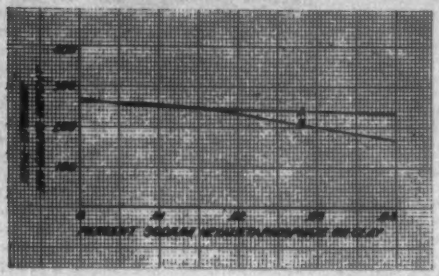


Figure 6

KAOLIN CLAY FACTS... *for Paper Makers*

NUMBER 8 OF A SERIES FROM THE J. M. HUBER CORPORATION LABORATORIES

COMPLETE SET OF THIS SERIES AVAILABLE ON REQUEST



Effect of Sodium Hexametaphosphate on Flow Characteristics of Clay-Casein Colors. (Graph Shows Two Typical Medium Fine Clays.)

EFFECT OF DISPERSING AGENTS IN CLAY-CASEIN MIXTURES In contrast to the effect observed in clay-water and clay-starch systems, the use of dispersing agents in clay-casein mixtures produces no increase in fluidity. If used in excessive amounts such agents are likely to result in a harmful effect. The accompanying graph shows the effect of increasing amounts of sodium hexametaphosphate on the flow characteristics of casein systems. The formula consisted of 42% total solids with 15 parts of casein to 100 parts of clay.

TESTING CLAY ABRASIVENESS The widest difference in abrasiveness occurs in filler grade clays, hence it is important to check this factor regularly. Years ago water washed filler clays gave superior abrasion results and a number of paper mills still favor them for that reason. However, the technique of refining Huber air-floated filler clays has advanced so far in recent years that there is now essentially no difference between the two types. Abrasiveness is measured by circulating a clay-water slurry through a perforated rubbing block which contacts a small section of Fourdrinier wire. Abrasiveness of the clay is recorded in terms of loss in wire weight in milligrams. Actual testing procedure varies in different paper mills, yielding different numerical values, but the relationship between a given set of clays should hold regardless of procedure used.

CLAY	Abrasion Test* (Wire Loss)
Huber Aerfloted Hi-White (Ga.)	15 mg.
Huber Aerfloted Paragon (S.C.)	16
Huber Water Washed Filler (Ga.)	22
Water Washed Filler "A"	28
Water Washed Filler "B"	22

* by the Valley Iron Works abrasion tester. Absolute values vary depending on test method used.

NOTE: Samples "A" and "B" are competitive clays obtained from mills using them regularly and are believed to be representative.

Core drilling a test hole at Huber's Langley, S. C. mine.

VARIATIONS IN CLAY DEPOSITS The kaolin clay deposits of Georgia and South Carolina vary in such essential properties as particle size, color and particularly in their rheological (flow) behavior. Such variations exist not only between deposits several miles apart, but often within short distances in individual deposits. The characteristics of a commercial-grade clay reflect, with slight modification, the nature of the crude from which it originates, hence it is important to predetermine the quality and uniformity of a deposit. This is done by drilling test holes which serve not only to secure samples for analysis but also to determine the boundaries of the clay areas.

Have you received your copy of "Kaolin Clays and Their Industrial Uses"—new Huber 144-page technical reference book? Write on your company letterhead.

HUBER

J. M. HUBER CORPORATION, *100 Park Avenue, New York 17, N. Y.*

MINES & PLANTS—LANGLEY, S. C., GRANITEVILLE, S. C., AND HUBER, GA.

ONE OF THE WORLD'S LARGEST CLAY PRODUCERS

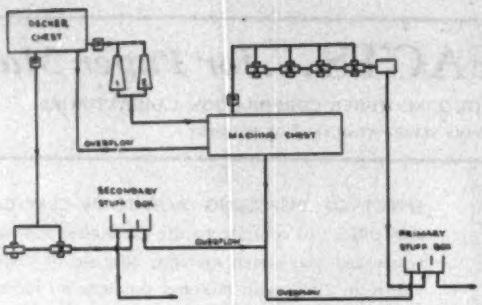


Figure 7

power it did provide an increase in production.

The next step was the installation of two 48" Sutherlands on the primary stock. These units went into operation in February 1949.

As shown in *Figure 5* stock from the Decker chest passed directly through No. 1 and No. 2 Jordans, arranged in parallel, to the machine chest. The raw stock also went through Nos. 3, 4, 5, and 6, 48" Sutherlands connected in parallel. All of this stock went into the machine chest. We were still in the same predicament as in set-up No. 4; all of this stock went into the machine chest and we had 14 or 15 tons of prepared stock that had to be removed from the machine chest before we could make changes on the machine. As before, if the stock was too free, we could touch it up a little with Nos. 5 and 6 Jordans, but there was no remedy for stock which was too slow. The two 42" Sutherlands were still on the secondary sheet and doing a very good job. We were still fighting reversion. It was about this time that we decided to cut back on production and make a better sheet so that we still would have a mullen test over 100 after reversion (all of this is on 42 lb. liner). A typical day under this set-up was 304 tons about 43 lb. weight, very good tear; over 400 both directions. With the two 42" Sutherlands, the four 48" Sutherlands and the four Jordans, it required 2219 KW per hour, or 7.3 KW days per ton for refining.

From our experience trying to operate the machine taking refined stock from the machine chest, which constituted about one hour and a half run to the primary control box and not having any luck controlling freeness in this manner, we got the idea that the stock should go directly to the primary control box from the refiners. To do this, we installed a pump as shown in *Figure 6* with the suction connected to the refiner control box and discharging into the line from 5 and 6 Jordans to the primary control box. This set-up allowed fairly good operation. We operated most of the time on this with three 48" refiners, three Jordans and two 42" refiners. The total power requirement was 2292 KW per hour, for 330 tons production per day, or 7 KW days per ton for refining.

With this arrangement, any change in refining shows up immediately on the machine. We were able to get a much better quality sheet under these conditions with an average of 108 mullen and a tear test over 400 in both directions. We still were getting some variations in quality or mullen that we thought were caused by trying to mix refiner stock and Jordan stock going to the primary control box. You will note the refiner stock was pumped into the discharge line from the No. 5 and 6 Jordans. We suspected the blending was poor with this arrangement causing variations in the finished board.

Our next move was to take out Nos. 5 and 6 Jordans as shown in *Figure 7*, using the two 42" Sutherlands on the secondary sheet and four 48" Sutherlands on the primary sheet and using Nos. 1 and 2 Jordans to break up shives in the stock from the decker chest. At this time our screening operation was not so good, as we were having to use too large openings in the plates in the tailing screen because of quantities we were putting through at this time.

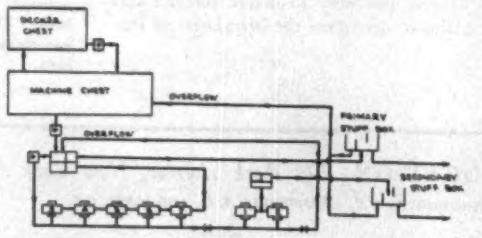


Figure 8

As shown in *Figure 7*, the stock was pumped from the machine chest through the four 48" Sutherlands to the flow control box built for these refiners. You will also note that the pump has been eliminated from the flow control box to the primary control box on the machine. This was made possible as our refiners are installed at such elevation that the stock flows by gravity to the primary control box on the machine. With this set-up, we were, as you can see, able to run the machine with stock prepared with Sutherlands only. The Jordans were doing practically no refining; only breaking up shives, but including the power required for these two Jordans, we were getting a power demand for refining of 2366 KW per hour and a production rate of 350 tons daily, or 6.7 KW days per ton for refining. We were very well satisfied with the operation of our stock preparation set-up at this time except for the fact that we wanted to increase our production to 400 tons for 24 hours. We did not have enough refiners for this. At this time we found that we could run a sheet of 42 lb. liner with 108 mullen over 400 tear in either direction at a rate of 350 tons per day. This was done with freeness of 650 on primary sheet and 450 freeness on the secondary sheet (Canadian Standard).

Our next move was, as shown in *Figure 8*, strictly for increased production. One more 48" refiner has been added and the pump that supplied the two 42" refiners was eliminated by using the same supply to all seven refiners. All the Jordans have been removed and new flow boxes have been added to the refiner outlets. These new boxes are equipped with Dezurik consistency regulators, which are used to give final regulation to the stock going to the flow control box going to the fan pump. This helps to hold constant weight on the sheet. Consistency regulation of stock going to the refiners is accomplished by means of a regulator on the decker chest.

We usually run with 3½ percent stock to the refiners and to get regulation after the refiners it will run slightly less. We do not think that this system of regulation is perfect and are still looking for something better.

With this last set-up, on days of 100 percent operation, production reaches 400 tons per day. We are able to run with 650 freeness on the primary sheet and 450 freeness on the secondary sheet. However, with production this high, we find other factors in our pulp mill and wet-end of the paper machine affecting quality, and are not getting as high mullen test as we would like. In due time we hope to be able to correct these conditions.

Our power demand with this set-up

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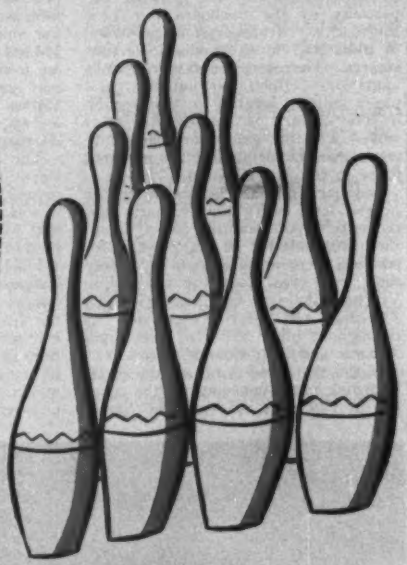

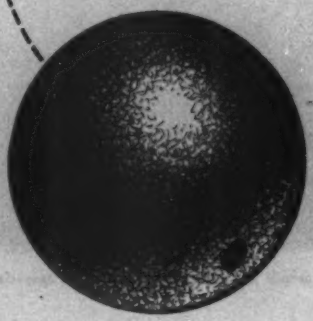

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is 2374 KW, which for 400 tons production gives 6 KW days per ton for refining. We believe that these changes in methods and equipment have produced some progress in stock preparation.

Summary

1. Power:

With all Jordans on sheet we were using 9.8 KW per ton day. With all refiners on sheet we are using 6.0 KW per ton day.

2. Quality of Board:

With refiners we have increased the mullen without losing our tear.

3. Maintenance:

With refiners we have the piece of equipment out of service only 2 hours to change a set of discs.

With Jordans the piece of equipment was out of service 48 hours to refill plug and change the shell.

4. Space Requirements

The refiners are taking up no more room than the Jordans were, yet we can refine 400 tons of stock today, whereas before we could only refine 300 tons.

PAPER USERS—II OF SERIES

An Ounce per Train Mile

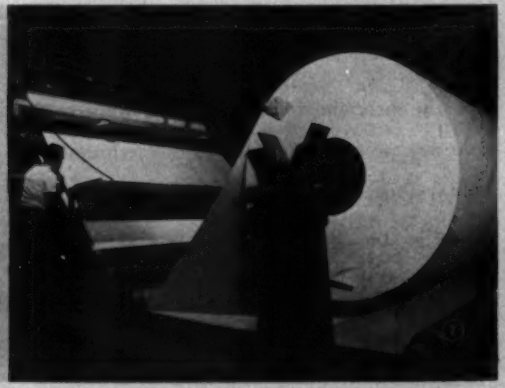
An unwavering belief in the tremendous economic advantages of pine forests in the Southeastern section of the country has been one of the contributing factors in the growing importance of the Seaboard Air Line Railroad as a transporter of pulpwood to mills and finish products to consumers. The story of this railroad's aggressive efforts to interest new paper mills in locating in that section of the country is one closely interwoven with the great development in paper manufacturing that has occurred there in the past 20 years.

Seaboard officials began to realize in the late 1920's that hitherto unrecognized potentialities for a manufacturing industry of staggering proportions were literally growing before their very eyes along the railroad in Virginia, the two Carolinas, Georgia, Alabama and Florida, as well as throughout other areas of the South Atlantic and Gulf Coastal plains.

More than one-third of the kraft wrapping paper consumed in the country in 1930 was made in the South, but by that time the Seaboard was pointing out that there was still a greater field for other kinds of paper manufacture. From 1925 to 1929 kraft production in the South had shown an increase of 171 percent. At that time, the South had a total net pine area of 114,684,000 acres capable of growing an average of approximately a cord per acre per year. Slash pine, the fastest growing species, has been known to yield 40 cords per acre at 20 years of age.

The Seaboard was not alone in its steady campaign to interest the paper industry in moving to the South, but it was one of the farsighted agencies that worked to bring life to this great productive capacity that today is so valuable to many other avenues of business and commercial activity in the South. Its industrial department under the leadership of Warren T. White lost no time in contributing information and experience to the movement to bring the mills to the South. It is a matter of record that he predicted in October of 1935 that "many large paper mills will be built in the South within a few years." Within two years after this prediction, 10 kraft pulp, paper and linerboard mills had been established at a total investment cost of $60 million, some of those built already were planning additions, and four other large mills were under contemplation. In 1936, all of the mills in the South were producing 1,500,000 tons of kraft pulp yearly—but the potential supply of pulpwood amounting to 50 million cords per annum was available, as compared to annual requirements totaling 12 million cords for the entire country.

Here, in an unbelievably short time, was a new industrial giant for the South, a tremendous thing which chewed up pine logs as if they were toothpicks and from them produced an amazing variety of products that touched upon and benefitted the daily lives of thousands of people in an inestimable number of ways. And there is very little likelihood, if any at all, that this great giant can run out of food, for the South has a pulpwood



1—Pulpwood stockpile at plant of International Paper Co. at Georgetown, S. C. 2—Production of pulp at plant of Rayonier Corp. at Fernandina, Fla.

growing capacity that could support a paper manufacturing industry of far greater size than that now operating in its areas, and for an indefinite period of time.

The replenishment of timber has become a pet project of the Seaboard's, and its program for the promotion of forestry and growing timber crops has been recognized as unique—unique not only because of its ultimate aim, but also because it is insuring a permanent supply of pulpwood by demonstrating the sound business procedure of "timber crops." In 1937 the Seaboard pioneered in the establishment of a forestry department which was designed especially to serve wood-using industries that brought big payrolls and many economic improvements to those vicinities in which they operate. The first railroad-sponsored farm youth program in the United States was worked out by the Seaboard in cooperation with the Future Farmers of America, aided by a number of the pulp and paper companies and state foresters.

This movement literally touches the grass-root pine seedlings of the pulp and paper industry. It is likely that 15 million pine seedlings were set out in the Southeastern States in 1950, mostly by Future Farmers—and the further prospects of this program are that many a young man today will have a graphic understanding of the value in money of his timber crops, as well as a full understanding of how to care for and protect his growing timber, which is another major interest of the Seaboard's forestry department. More than 13,000 persons receive the Seaboard's quarterly "Forestry Bulletin."

What has all this meant to the Seaboard? Why has this railroad undertaken a program of such active interest in this phase of the paper industry? The answer, of course, is that the bigger the paper industry in the South becomes, the more carload revenue the Seaboard can expect — but there is still another answer, explicit in the goodwill and fellowship that Seaboard has found along its lines among those with whom it has worked for greater timber production. This has been, actually, an investment in friendship that has brought the Seaboard much closer to its patrons and its potential shippers and has resulted in the establishment of a cooperative relationship with growers that has great intrinsic worth as a sort of personality asset for the railroad.

TABLE I

Paper and Products Purchased 1949
S. A. L. Railroad Co.

	Weight
Stationery	663,880
Wrapping paper	23,930
Face tissues	5,505
Cartons	18,072
Dunnage paper	173,145
Toilet paper	89,463
Paper towels	81,380
Paper bags	7,323
Paper cups	12,000

There also has been, as a natural consequence of the growth of the paper industry in the South, a resultant increase in the Seaboard's freight revenue which, while gratifying indeed to the line, is an unusually interesting reflection on the paper industry's importance to the South.

For instance, in 1936 the Seaboard handled 2,851 carloads (67,512 tons) of pulpwood. This tonnage jumped in four years to 41,955 carloads (1,931,006 tons) in 1940, and in 1949 it amounted to 86,885 cars (3,545,401 tons). It can be seen clearly from these actual figures how the early growth of the paper industry in the South between 1936 and 1940 vitally affected the Seaboard's movement of related raw manufacturing products alone, for in this relatively short period the line's movement of pulpwood increased more than 39,000 carloads with a corresponding increase of 1,863,494 tons.

There likewise were increases in the Seaboard's movement of other paper items, notably paperboard, fibreboard, wallboard and pulpboard, which in 1936 amounted to 1,710 carloads (31,797 tons). In 1940 this movement had grown to 11,102 carloads (234,075 tons) and in 1949 it amounted to 28,739 carloads (754,205 tons).

A somewhat similar increase was shown by the Seaboard in its handling of wrapping paper and paper bags. In 1936, this amounted to 1,171 cars per year (27,456 tons), and in 1940 it was 2,300 carloads (51,376 tons), and this figure in 1949 had climbed to 7,674 carloads (198,669 tons).

Along with its work as a mover of paper products and related raw materials, and with its interest in developing the great pine acreages of the Southeast into an inexhaustible supply source for the mills, the Seaboard itself is a consumer of paper in its own right.

For example, in 1949 it purchased a total of 874,788 pounds of paper, ranging from the lowly but important coach drinking cup to the best grades of office stationery. Considered on the basis of the line's 4,150 miles of road, this means that the Seaboard in 1949 purchased slightly less than 211 pounds of paper for every mile of road it operates. Looked at from another viewpoint, it means that the Seaboard required approximately one ounce of paper for each of the 15,367,632 train miles operated by the line in 1949.

3—Paper making at Georgetown, S. C., plant of International Paper Co. 4—Loading of paper into box car at Union Bag & Paper Co. plant, Savannah, Ga.

Bankers, Blind Spots in Forestry*

G. G. WARE[1]

No title was assigned for my use when I was invited to appear before you this morning. If I were to give a title to what I intend to say it would be "Bankers' Blind Spots in Forestry." It is because of the reputation of bankers generally, as regards wisdom and farsightedness, that the blind spot which afflicts them is so inexplicable. Yet, for many years, I must confess that I was similarly afflicted.

My father was not a banker, but a sawmill man. I remember that he used to get much of his timber at no cost. His neighbors wanted their land cleared for cotton growing. They offered the trees to him — free of charge — if he would cut and remove them from the prospective cotton field. And those trees were as big and as good as any trees that ever grew in Florida, and in most instances they had not been turpentined. I remember that my father sold the rough heart lumber for about $10 per thousand board feet.

I remember that in the same period "new ground" cotton land was very desirable. Clearing new ground was often done on the cooperative plan through the medium of having a "log-rolling day." The neighbors would come and help roll together and burn the finest logs that ever grew in Florida. The logs had no value — instead they were regarded as a nuisance.

This kind of experience created for me my "blind spot" in regard to forestry. I retained my early impression that trees were worthless. The average banker of middle age or older had the same experience or acquired and retained similar impressions of the value of trees.

But times have changed.

Today I am convinced that our greatest economic opportunity lies in our tree-growing lands. It is an economic opportunity greater than any of the others which we recognize and struggle to grasp.

But far and beyond the economic value is another value which can not be measured in dollars — it is the maintenance of our water table — our climate — wild life and soil fertility — it is the maintenance of the green beauty of our country. It is the maintenance of our easy, pleasant, wonderful way of living. These things are far more precious than the dollars the trees may be worth. Should our water table be greatly lowered, we might find ourselves living in a desert. The wonderful thing about this newly discovered tree crop is that it is renewable, it is easy to handle, it is dependable, and from it we can derive fabulous money benefit and at the same time — if we plan it that way — preserve our way of living.

Our trees, water table, climate, soil fertility and wild life might well be considered as an arch, with the trees as the keystone.

The key to timber abundance all over this country where timber is a natural crop is no farther away than the nearest farmer who owns a small tract of woodland. It is from such small tracts that our future timber must come, for we are fast approaching the day when our vast original stands of virgin forests will have been harvested. In my region — Florida — we have already gone through the "virgin timber" cycle. The "cut out and get out" mills have completed both jobs.

We have in this country some 461 million acres of what is called "commercial forest land." This is the land best suited to tree growing. It will grow trees better than anything else.

Since our future timber, in the main, will consist of timber we grow, nothing could be plainer than the fact that it must come from these small owners, our neighbors, the farmers and small investors in land.

Change in Forest Economy

Our forestry economy has been changing. We are looking less and less to the primeval forest, and more and more to the younger growing forests. This, in itself, is no calamity, for our forest lands are capable of meeting our needs if they are properly managed and protected. Far from being a calamity, it is an opportunity for these millions of fellow Americans who own these tree-growing acres.

The opportunity exists because our growing nation needs more wood for more uses than ever before, and the end is not yet in sight. Wood remains our basic material for construction. It is the raw material for almost all our paper. It is transformed into rayon clothing. It emerges from chemical treatment as cellophane and as plastics. It gives us turpentine, both from the living pine and as a by-product from logging and paper pulp waste. What we have termed "wood waste" can provide us with industrial alcohol, new types of building materials, and even protein feeding yeasts of high food value for livestock. Some statistician has counted more than 4,000 uses for wood.

And these uses for wood are expanding. Multiply increased uses by increasing population with increased income and you have an answer that spells increasing demand. This increasing demand must look more and more to new growth for raw material and this emphasizes our dependence on the small woodland owner. In other words, the long view of wood production indicates pretty closely that the market will be there and that as the years pass it will be a larger market.

Too often, we bankers and the land owners themselves think of a farm only as pasture land, yearly crop land and orchard land. We have for too long a time thought of the woods as waste. We must all correct our way of thinking.

Far from being waste, tree-growing land can and should be a part of the whole farm operation. Trees can contribute far more than fence posts and fuel for the farmer's own use. They can contribute cash income to the farmer, and enhance the stability of our forest industries at the same time. They can be permanent sources of income. A well-managed woodland not only yields continuing harvests, but it increases in value and productiveness as the years pass.

Woodland Management—Its Recognition

Woodland management is well adapted to almost any farm operation. The woods are not hard taskmasters. They don't demand immediate attention in the way ripening corn or cotton or watermelons or oranges do. Work in woodlands can be done when other farm jobs are not pressing. If markets are not good at the moment, the woodland owner can afford to wait. His crop won't wilt on the vine. Rather, it will increase in value. There are things to know, and work to be done, but they are not difficult or complicated. In most cases, common sense is the rule. The result is a backlog of value for the landowner.

On all sides we see recognition of this situation in a practical sense. Governmental agencies, both state and federal, are lending a hand. Private forest industries not only are managing their own properties, but also are extending their assistance to the smaller landowners, who are their neighbors and who are owners of important potential sources for raw materials.

One of the things giving me most confidence in this forestry movement is the fact that in my state pulp mills are now buying their wood supply at

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[1] Chairman, Forestry Committee, American Bankers Assn.

* Presented at annual meeting of Southern Pulpwood Conservation Assn., Atlanta Biltmore Hotel, Atlanta, Ga., January 23, 1951.

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present day prices and permitting their own forest lands to grow. They tell me that what they are doing is to bring the newly acquired forest lands into balance, and that in later years they intend to harvest their own wood on a sustained yield basis. They tell me that they believe there can be no over-production of timber.

This belief is further evidenced in the "Keep America Green" movement which forest industries and others have sponsored in many states as a means of popular education in forest fire prevention. We find further evidence of such assistance in the American Tree Farm System movement now active in many states. This is a program to encourage better management of privately owned woodlands. Both these programs are active in my state, and although new, already have accomplished much.

Who started this evangelistic movement to protect our forests from fire and to plant as many trees as are cut each year? It was not started by the "cut out and get out" sawmill men, nor was it started by the millions of owners of small acreages. It was not started by the open range cattlemen, nor was it started by the bankers.

The movement is fairly recent. It seems that even twenty years ago the movement was of very small proportions, and that almost no progress had then been made. However, in recent years—say the last three or four years much interest has been aroused among the small landowners, the bankers, merchants, teachers and citizens generally, and forest preservation and creation is a live topic in the papers, on the radio, in classes and in many meetings, just as it is in this meeting.

Development of forestry is now recognized as an absolute necessity, from a civic standpoint, and an amazing opportunity from an economic standpoint. The movement is so new and of such vital importance that I think we should begin discussions and reach a determination as to who was the original evangelist. Then we should build a monument to him or to them.

I am one banker believing this forestry movement is the greatest movement, from both a civic and an economic standpoint, of any movement started so far.

If it were my privilege to name the originators, I would nominate the pioneer pulp and paper industrialists. They built plants costing many millions of dollars each, designed to operate every hour of the day and every day of the year — employing skilled, highly priced labor. They visualized a raw material inventory that would grow in quantity and value, that would be self-perpetuating and would last forever — as long a time as that is. If these pioneer pulp and paper men had not swung into action twenty and more years ago, I doubt very much if we would be having this meeting here today.

Bankers

Bankers are rapidly awakening to the several values involved in this forestry program. Bankers' associations in several of the states have active committees on forestry and in each instance these committees are earnestly promoting the program among all the bankers in the several states.

The American Bankers Association, through Deputy Manager A. G. Brown, who is director of its Agricultural Commission, is very much interested in promoting forestry among the remaining State Bankers Associations not now actively engaged in the effort. The A.B.A. has appointed a forestry committee, its members selected on a geographical basis, and that committee is actively promoting forestry among the approximately 15,000 banks of the nation. This committee believes that there is no better agency through which to reach the small landowner (the "tree-root of the problem") than the local banker.

Our committee finds that its hardest job is to cure the blind spot of the local banker. Organizations such as yours can do as much or more in curing these bankers' blind spots as can any other agency. You are in touch with local bankers on a national scale.

In Florida we have a banker who has done yeoman service for several years in forestry promotion. He is X. L. Pellicer, vice-president of the St. Augustine National Bank. Mr. Pellicer is growing trees on his own account on a good-sized acreage. For several years he was president of the Florida Forest and Park Association, and presently he is serving by appointment from the Governor as chairman of the Florida Board of Forestry.

In an article published in the August 1947 issue of *American Forests*, Mr. Pellicer made a suggestion which I quote and earnestly request you to adopt for action:

"The purpose of this article is to suggest that forestry agencies and organizations direct a large part of their educational program toward the bankers of the nation."

There are around 15,000 banks and many more than 100,000 bankers in the United States. Many of these bankers have not yet been sufficiently exposed to this new forestry idea to have shed their blind spots concerning it. Ways must be found to attract their attention, arouse their interest, awaken their desire, and thus compel action by them to restore the old and to bring in new forests throughout the nation.

Forestry Credit

National banks cannot make loans in any amount or on any valuation on unimproved real estate. Present National Bank Regulations decree that forest lands are not improved real estate. Therefore, National Banks cannot give any value to that part of a farm growing pine trees. They cannot even accept a mortgage on the timber-growing part of such a farm.

I quote from the Regulations of the Comptroller of the Currency, the supervisor of the National Bank System:

"2140. Loans Secured by Timber Land or Standing Timber

"Standing timber ordinarily constitutes real estate, and since neither timber land nor timber is 'improved real estate' (except in unusual circumstances), loans secured thereby are prohibited by Section 24.

"The courts of some states have held that where standing timber has been sold under an agreement whereby it must be cut immediately and removed, the timber is considered to be converted from real estate into personal property. In such states it is possible that the purchaser of such standing timber, subject to the agreement to cut and remove the trees immediately, could give a valid chattel mortgage thereon, and in that event a loan secured by such chattel mortgage would not be subject to section 24."

The American Bankers Association is making a study of this credit restriction. It is hoped that sufficient evidence can be developed and presented to the Comptroller to convince him that American Tree Farms are good credit risks. (Is this just another blind spot?) Bankers advocating forestry find themselves in a rather contradictory position when they say, "We believe forestry is our greatest economic opportunity — but we are prohibited from accepting it as a basis for credit."

Refuge from Inflation

A tree farm, no matter whether large or small, is one of the safest places in which to store value for future use that can be devised under our economic system. Timber always has been a necessity for humans. There is no danger that this necessity will evaporate. Value stored in interest-bearing obligations — even bonds of the Government, in many countries, has been entirely or almost entirely wiped out, through currency or money revaluation. We do not believe that will happen here, but we do think about and talk about the best way of "hedging against inflation." There cannot be a better hedge than a good, well-managed tree farm. Its product will always exchange on a favorable comparative basis with all other necessary products, no matter what the value of the currency.

I am one banker believing that forestry — our one great renewable natural resource — should be developed to the 'nth degree. I believe that through the efforts of forest organizations and agencies the country over, through education and example, the blind spots which now prevent bankers from seeing the value, real and potential, of forestry promotion, will disappear, and these men will lend their wholehearted assistance. It will be a case of "Whereas I was blind, now I see."

A Water Policy for the American People

During the past year the Presidents Commission on Water Policy has held hearings around the country. APPA and many paper companies, unions and others affiliated with the paper industry have filed briefs and appeared before the commission. Our people have advocated free enterprise development or water shed planning by the residents of such areas. These methods are in successful operation in Wisconsin and New York.

The commission has filed its report. It should be intensively studied by every American. For we must decide and soon, whether we want to control our resources locally or have Washington do it for us.

The policy as outlined by Morris L. Cooke follows:

Outline of Policy

On these principles the Commission has framed a water policy for the American people which is embodied in the following series of recommendations:

Program Planning

1. As a guide to national investment in natural resources development, all Federal agencies should be directed to judge new river basin programs in terms of a set of clearly defined national objectives established by Congress.

2. These objectives, as outlined in detail by this Commission, should reflect the general purpose of water resources investment to achieve the maximum sustained use of lakes, rivers, and their associated land and ground water resources, to support a continuing high level of prosperity throughout the country. They should include the safeguarding of our resources against deterioration from soil erosion, wasteful forest practices, and floods; the improvement and higher utilization of these resources to support an expanding economy and national security; assistance to regional development; expansion of all types of recreational opportunity to meet increasing needs; protection of public health; and opportunity for greater use of transportation and electric power.

3. Congress should direct the responsible Federal agencies to submit new proposals for water resources development to Congress only in the form of basin programs which deal with entire basins as units and which take into account all relevant purposes in water and land development. This multiple-purpose basin approach should apply to the whole process by which water resources projects move from the survey to the authorization and appropriation stages. It would enable Congress and the people concerned to have a clear picture of the entire program for each basin and its relation to the economic and social development of the region and the Nation.

4. To insure the preparation of sound basin programs, Congress should direct the responsible Federal agencies to cooperate with each other and with the appropriate State agencies in the necessary surveys and plans. Such action requires some definite coordination of the efforts of Federal and State agencies. While administrative reorganization in the field of natural resources is outside the assignment of this Commission, the Commission believes that, lacking such agency reorganization as was recommended by the Commission on Organization of the Executive Branch of the Government (Hoover Commission), Congress should set up a separate river basin commission for each of the major basins. These commissions, set upon a representative basis, should be authorized to coordinate the surveys, construction activities, and operations of the Federal agencies in the several basins, under the guidance of independent chairmen appointed by the President and with the participation of State agencies in the planning process.

5. Congress should designate the Federal departments and independent agencies to participate in the river basin commissions. Such participation should provide for representation of all agencies with functions included in water resources programs. Congress should assure all such agencies adequate authority to participate in comprehensive planning on an equal basis, together with appropriations consistent with such participation.

Evaluation

6. Procedure for evaluation of proposed water resources developments should be revised to apply to multiple-purpose basin programs, and to projects only as constituent parts of such programs.

7. To assure uniformity in the application of evaluation procedure, Congress should direct all Federal agencies to apply the same standards and methods to the evaluation of all river basin programs.

8. The orderly formulation of national water resources programs requires the establishment of a Federal Board of Review appointed by the President with the confirmation of the Senate. This Board should perform, among others, the functions of the review agencies recommended in the reports of the Hoover Commission.

9. The evaluation procedure should start with the measurement of direct benefits from and costs of programs, but should be supplemented with standard procedure for taking account of secondary costs and benefits. Similarly, values should be assigned to public benefits and costs which affect the general welfare. This could be accomplished in accordance with a standard form of investment appraisal statement for each program or project within that program.

10. The investment appraisal statement should be in a form which would present the benefits and costs simply and clearly for the guidance of Congress and of interested citizen groups.

11. The investment appraisal statement should include a complete estimate of the costs to the American people, both direct and indirect, of undertaking any project. Direct costs should include the initial investment in preliminary investigation, survey, and plan; construction; land acquisition; rights-of-way; utility replacement; and administration and overhead. Indirect costs comprise those resulting from displacement of population, loss of land and minerals, loss of wildlife, and loss of scenic or historic values. The indirect costs may be stated in nonmonetary terms.

12. The investment appraisal statement should also include a complete estimate of primary and secondary benefits. Primary benefits should be evaluated in terms of a procedure which places a monetary value on those susceptible of such evaluation. Secondary benefits should be estimated by the interested agencies according to a uniform procedure jointly developed with the approval of the Board of Review. They should reflect the increase in national income resulting from the program.

13. The evaluation procedure should also provide that, where the sum of the benefits so estimated is not sufficient to balance the direct and indirect costs, the final decision by the basin commission on the merits of the project should include a judgment as to whether the balance of general welfare benefits and detriments contributes sufficient additional value to warrant construction of the project.

14. Congress should direct all Federal departments and agencies respon-

sible for the development of water and land resources, in cooperation with interested States, to promptly review all existing plans and programs, and to cooperate in preparing coordinated plans for water resources development for the several river basins. Plans already authorized by Congress should remain undisturbed unless this review results in specific recommendations for change.

Basic Data

15. Congress should make ample provision, in the national water resources program, for compilation and analysis of the necessary basic information to assure sound, comprehensive multiple-purpose basin planning. This should include geologic, hydrologic, climatic, land and soil analysis, and economic data to meet the needs of the planning agencies.

16. Congress should require that all basin recommendations carry a precise statement as to the adequacy of the data upon which they are based. Congress should be prepared to withhold approval of recommendations in areas where the data are inadequate.

17. A survey program designed to supply the country with full geological and hydrological knowledge of its surface and ground water resources, including all their characteristics, should be initiated immediately, with ample funds for the early compilation of essential information. Thereafter it should be continued to meet all of the requirements of basin programs.

18. The appropriate agency should be directed to undertake the annual compilation of and report on all water uses and requirements in relation to available sources of supply. This should be comprehensive and should be reported for regions and localities on a basis permitting 10- and 20-year running forecasts of requirements and supply.

19. A survey should be undertaken promptly to evaluate the possibilities of and provide a program for developing the water now being consumed in the West by unneeded, water-loving plants whose roots tap the water table or the capillary fringe above it.

Financing Programs

20. The financing of the Nation's river basin programs should be set up on a long-range basis, with each annual budget request therefor subdivided by river basins. These budget requests, in turn, should be subdivided by projects, functions, and agencies. To obtain these results, Congress should direct all Federal agencies to submit their budget requests, insofar as they involve water resources, by river basins. The entire procedure should result in 6-year river basin capital investment programs and annual budgets, originating in the agencies, coordinated by the river basin commissions, and reviewed by the Board of Review for submission to the Bureau of the Budget. Congress should make an annual appropriation to each river basin commission for its activities.

21. The annual water resources investment program should be based on a thorough review of the Nation's resources and of its resources development requirements. The budget should show the expenditures required to maintain the Nation's heritage of land and water resources, to increase the national and regional productivity, and to provide for health and recreation.

Reimbursement

22. Congress, in drafting new legislation or amending existing legislation, should provide for a uniform national reimbursement policy and specify the principles to be applied.

23. Reimbursement procedure should aim, as far as possible, to recover a reasonable portion of the benefits accruing from public expenditures for water resources development. This should provide for charges for benefits where they can be collected, and agreements with interested States under which they would utilize their powers of taxation or assessment to assure reimbursement to the Federal Government for primary and secondary benefits not susceptible of direct collection.

24. Reimbursement policy for given functions such as reclamation by irrigation or drainage should be uniform for all Federal agencies.

25. Reimbursement for various types of benefits from water resources programs should be determined in accordance with the following principles: *(a)* For domestic and industrial water supply and hydroelectric power it should provide for full repayment of water supply or power costs including operation and maintenance, repayment with interest of an appropriate allocation of the program investment, and payment in lieu of local and State taxes which would have been paid on acquired properties; *(b)* for drainage, irrigation, and watershed management it should be based on ability to pay, without interest, measured by the resulting increase in the land operator's net earnings; *(c)* for navigation it should be determined in connection with a general program for putting charges for all forms of transportation on a cost basis, including interest; *(d)* for all other benefits, the responsibility for securing repayment of the cost of primary and secondary benefits should be shared by the States on an agreed basis, while general welfare benefits should be the responsibility of the Federal Government.

26. The Federal contribution to the cost of a river basin program or project should be considered as balancing the contributions to the general welfare estimated to result from the undertaking.

27. Congress, in appropriating for basis programs, should distinguish between the portions of the total investment allocable to the different benefits on the basis of proposals by the basin commissions, passed upon by the Board of Review. Multipurpose program accounts should be established for each basin and for the national water resources program as a whole to assure clear identification of all costs, benefits, and repayments.

28. Irrigation projects should be placed on the same basis as other water resources projects for which full reimbursement is not required as a test of feasibility.

Water Resources Management

29. Ground water resources should be included in comprehensive basin programs, with clear recognition of their interrelationship with surface waters, and with due regard to the rights and interests of the States. The Federal Government should encourage enactment of State laws and negotiation of interstate compacts that foster water management for optimum yield and use, especially with respect to surface and ground water storage opportunities.

30. Watershed management should be included as a principal objective in the planning and development of basin programs, with large enough allotments of funds to enable soil conservation, range management, and forest agencies to undertake activities which will bring economically controllable deterioration of the land under control within a reasonable period of time.

31. All related Federal policies and activities, including the price support, agricultural conservation, irrigation, credit programs, and administration of Federal mining laws should be adjusted to strengthen the effectiveness of watershed management.

32. Flood control should be considered as an important part of water resources management. Conservation storage of floodwaters in the soil, underground, and in surface reservoirs on tributaries and upper reaches of rivers should be a principal factor in the planning and development of river basin programs.

33. Consistent with other aspects of the basin program, flood storage should be located and designed to assure the greatest possible use and reuse of floodwaters in the course of their journey to the sea.

34. Congress should authorize the responsible Federal agencies, in reviewing river basin programs, to consider all of the possibilities of flood protection, flood storage, and utilization of floodwaters. They should consider such measures as local flood protection works, flood plain zoning, flood forecasting, design of levees and related works to release sediment-laden water on the land where this would contribute to fertility of the soil. They should also consider all types and combinations of reservoirs designed to meet the Nation's requirements in all fields of water utilization.

Land Reclamation

35. An over-all program should be

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SUMMARY OF CONSOLIDATED INCOME

For the Years Ended December 31, 1950 and 1949.

	1950	*1949*
Net Sales, Royalties, and Rentals	$154,789,186	$127,335,591
Cost of Sales and Expenses	$134,376,511	$118,719,146
Operating Income	$ 20,412,675	$ 8,616,445
Income Credits	$ 1,362,283	$ 992,916
Gross Income	$ 21,774,958	$ 9,609,361
Income Charges	$ 1,626,088	$ 1,542,833
Net Income Before Provision for Federal and Foreign Taxes on Income	$ 20,148,870	$ 8,066,528
Provision for Federal and Foreign Taxes on Income	$ 8,525,126	$ 2,588,325
Net Income	$ 11,623,744	$ 5,478,203
Dividends Paid		
Preferred Stock	$ 752,105	$ 798,575
Common Stock	$ 3,619,500	$ 3,102,428

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prepared for the employment of all methods for orderly expansion of agricultural production to meet the Nation's expanding needs. This program should coordinate irrigation, drainage, flood control, clearing, and the sound farm practices which are an essential part of watershed management.

36. The first objective of this program should be adequate provision of farm products from soil so managed that its productivity is enhanced. Irrigation and drainage projects should be authorized only after review by the Department of Agriculture indicating that they are in harmony with sound use of land.

37. The weight to be given reclamation of land (including irrigation, drainage, clearing, and other measures) in determining the relative priority of programs and order of construction of specific multiple-purpose projects should be based on regional as well as national considerations. National considerations should include Federal responsibility for continuing adequacy of dependable farm production, taking cognizance of the time required to bring new lands into the Nation's agricultural economy. The expansion of local production to meet the requirements of growing regional economies should also be considered.

38. In determining the desirable schedule for adding to the Nation's agricultural acreage through reclamation, full consideration should be given to the probable rate of increase in the productivity of existing agricultural lands through improved agricultural practices, including supplemental irrigation in humid areas. To the extent that such increased productivity is associated with sound land management, it should be recognized as of primary importance. But, beyond this, improved agricultural practices should be left to private business endeavors with the cooperation of the United States Department of Agriculture and the land-grant colleges until such time as the economically sound possibilities of expanding farm acreage through irrigation or drainage have been fully realized. The justification for public investment in irrigation is that there are public ends to be attained which the commercial price system cannot reflect.

39. Decisions as to the relative priority of projects involving various types of reclamation as a means of expanding the country's agricultural acreage should be made in terms of both national and regional economic considerations. They should recognize the extent to which individual projects are integral parts of comprehensive river basin programs serving other important purposes. Important weight should be given to the comparative costs of meeting agricultural production objectives by alternative undertakings, but consideration should also be given to the special usefulness of certain irrigation opportunities in stabilizing agriculture, meeting expanding regional requirements, or contributing to regional expansion. The weight to be given these separate considerations should be determined by the Board of Review upon recommendation of the basin commissions.

40. To protect its interest in securing the maximum reasonable reimbursement from direct beneficiaries of reclamation projects, the Federal Government should make more effective provision for the adequate planning, sound financing, and scientific farming of agricultural development and land settlement on reclamation projects. This should include extension of Federal credit at reasonable interest rates for the farmer's investment in structures, equipment, fertilizer, stock and seed, and the technical training and guidance of settlers.

41. Special consideration should be given to rehabilitation of existing irrigation projects, both Federal and private, as well as to small new irrigation projects offering the possibility of stabilizing the agriculture of an area.

42. The principle embodied in the reclamation law that the benefits of Federal financial assistance through irrigation projects should go only to family-sized farms, together with other antispeculation and antimonopoly provisions, should be maintained and enforced. It should be extended to apply without discrimination to all new projects involving Federal investment in the reclaiming of land, whether by irrigation, drainage, or other methods.

43. The present 160-acre limitation provision should be considered as a maximum, with flexibility for adjustment downward after hearings, to adapt it to types of farming characteristic of different areas. It should apply only to the reclaimed portion of a farm.

44. In regions where it is proposed to deliver supplemental water to areas already under irrigation, provision should be made for the supplying of an equitable share of such water to existing farms exceeding the acreage limitation under utility-type contracts. In these contracts the charges for the water should be based on the full cost of supplying water to such lands, including amortization with interest of the full investment allocable to this purpose.

45. Before new Federal reclamation projects, or projects providing supplemental water or drainage for existing projects, are undertaken, every effort should be made to secure agreements or contracts with the State or States involved or the local interests to be benefited under which surface and ground water benefits will be considered together. All beneficiaries should be subject to the standard reimbursement obligations, whether securing the benefits from augmented surface or ground waters.

46. The same conditions as to authorization, repayment, technical and financial assistance, and acreage limitation should apply to all projects or project beneficiaries, where Federal investment in reclamation of land is concerned. This principle should be applied irrespective of the method of reclamation or the Federal agency responsible for the project.

Water Supply

47. Municipal water supply should continue to be primarily a local responsibility, including intercommunity cooperation through the formation of metropolitan water districts to make possible area-wide coordination of water supply sources to meet the needs of an increasing population. The growing needs of communities for water supply should, however, be considered in connection with the planning of all comprehensive basin programs. Their use of water from multiple-purpose reservoirs and improved stream flow should constitute a fully reimbursable service under such programs.

48. Possible future water requirements of large water-using industries should be considered as an important regional and national factor in connection with the planning of comprehensive basin programs. This should be particularly the case in regions where deposits of oil shales or other special resources point to industrial developments of significance to the Nation's economic and military security.

49. The possibilities of contributing to municipal and industrial water supply and irrigation through recharging of ground water reservoirs and flows should be given full consideration in connection with all comprehensive basin planning. More complete knowledge of the country's ground water resources may open the way to ground water storage of surplus floodwaters as an important supplement to surface storage.

Pollution Control

50. Pollution control should be considered in the planning and development of river basin programs. It should be recognized as a major contribution to the Nation's objectives in the fields of water supply, recreation, fish and wildlife.

51. A 10-year period should be set within which to accomplish a reasonable program for cleaning up the Nation's polluted waters. Cooperative efforts of private industries, organizations, municipalities, States, and the Federal Government should be mobilized to that end.

52. Sufficient funds should be appropriated for the administrative and regulatory activities of the Public Health Service, Division of Water Pollution Control to make sure that present congressional policy is adequately tested. Ample funds for Federal loans to municipalities should be made available at not more than 2 percent interest covering the entire cost of constructing the necessary sewage treatment works.

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53. Multiple-purpose reservoirs should, as far as consonant with other major purposes, be planned and operated so as not to aggravate but to contribute to the control of pollution. This should include regulation of releases of water to make fullest use of the stream's potential self-purification capacity, with advance determination of the schedule of releases to permit proper classification of the stream by the Public Health Service for pollution control purposes.

Waterway Transportation

54. The Nation should continue the improvement of its inland and intracoastal waterways to standard depth as an important objective of comprehensive basin programs. This part of water resources development should be integrated into a broader program designed to provide the Nation with an economical and efficient coordinated transportation system including railroads, motor transport, waterways, and airways. In such a coordinated system all forms of transportation should be considered as complementary rather than competitive with each other.

55. Waterway charges should not be considered as yardsticks for railroad rates, but rather as rates for traffic which, in the coordinated transportation system, can move more economically by water than by rail. In order to assure the greatest over-all contribution of the transportation system to the Nation's well-being, railroads should not be permitted to establish discriminatory rates paralleling waterway rates.

56. Decisions as to user charges, or tolls, for waterway commerce should be worked out as part of the whole problem of reconciling and making workable a coordinated transportation system. But, with rates for all forms of transportation based on full costs, an interconnected system of modern waterways, coordinated with land transportation, should be able to sustain itself with tolls based on full costs and yield returns on the public investment while contributing to most economic use of the Nation's resources.

Hydroelectric Power

57. Full development of the Nation's undeveloped water power resources, as an integral part of comprehensive basin programs, should be considered a major Federal responsibility, to be exercised in such a way as to assure ample supplies of hydroelectric energy well in advance of expanding regional and national needs.

58. Federal hydroelectric plants should be designed to produce ultimate capacity and energy which will best fit into the requirements of potential markets on the assumption of complete regional integration of power supply.

59. Future licenses for new non-Federal water power developments should be issued only with the joint consent of the Federal agencies responsible for power in basin programs. In exercising this responsibility, the Federal agencies should continue to recognize the preferential position accorded State and municipal applicants under the Federal Power Act.

60. The Federal power marketing policy heretofore adopted by Congress, authorizing Federal agencies to build transmission facilities, giving preferences in power sales to public and cooperative bodies and fostering low rates for residential and rural consumption, should be continued.

61. Federal power marketing policy should be carried out flexibly to assure sound adaptation of Federal power supply responsibility to regional power resources and the most effective cooperation of all power systems, public and private, in the task of assuring ample supplies of power at the lowest possible rates.

62. Since private power systems will probably continue to provide a large share of the new capacity required to meet future needs, Federal arrangements for marketing power should where possible take full advantage of private power facilities, provided the contracts preserve the preferential rights of public bodies and cooperatives to a share of the power, or its equivalent, at the lowest possible rates.

63. Where the Federal Government assumes a major responsibility for the power supply to distribution systems, this should be recognized as a utility responsibility, requiring the construction of new generating capacity, whether hydroelectric or steam-electric, well in advance of expanding needs.

Fish, Wildlife, and Recreation

64. Preservation and enhancement of the Nation's fish and wildlife resources should be recognized as one of the important objectives of comprehensive river basin planning. The requirements of this objective should be thoroughly investigated in connection with project proposals designed to serve other major purposes. Releases of water from multiple-purpose reservoir projects should be adequate, except where higher uses dictate otherwise, to guarantee continuous use of the river by wildlife and fish. All proposed basin projects should be studied to determine in advance their effect on waterfowl habitat.

65. The recreation potentialities of all water resources, whether natural or artificial, should be recognized, and expansion of outdoor recreation opportunities should be given full consideration in all comprehensive basin programs. To achieve this objective suitable lands adjacent to Federal water projects should be reserved for recreation use, and consideration should be given to minimizing water level fluctuations in storage reservoirs during vacation season, to improving low flows of rivers, and to pollution abatement. In densely populated areas and in regions where natural water recreation opportunities are limited, recreation may be a controlling factor in water resources programs.

66. Cooperative arrangements should be worked out with States and local governments for planning, developing, and maintaining recreation areas at government water projects, subject to the observance of specified standards to preserve general opportunity to enjoy the recreation resource under conditions in harmony with the natural environment.

67. Federal participation in recreation features of water resources programs should be determined in relation to Federal participation in other recreation programs. To this end, it is desirable that Congress authorize a study of the whole recreation field, having as its objective the development of a national recreation policy.

Future Possibilities

68. The Federal Government should recognize that, with growth of population, urban concentration, industrialization, and the need for an expanding agricultural base, availability of fresh water may soon become a limiting factor in the expansion not only of the Nation's arid and semi-arid regions but also of our entire civilization. The Government should, therefore, accept the responsibility for large investment in broad research programs designed to expand the available supplies of water. Such research programs will be directed toward:

(a) Exploring and developing the necessary techniques for utilizing the full possibilities of the Nation's ground water resources;

(b) Establishment of a sound national policy for control of artificial rainmaking activities and the application of science to devising methods which can be utilized in the public interest; and

(c) Exploration and experimentation, including pilot plant operation, in the general field of conversion of sea water to fresh water on an economical basis.

In terms of the Nation's future, such research and experimentation may well be found to rank with the development of atomic energy utilization.

69. The recommendations summarized above, and more fully explained in subsequent chapters, should provide the nucleus of a consistent national water resources policy to guide the Nation in the further development and use of its water potentialities.

70. The Commission recommends that the policy embodied in the above recommendations be incorporated in a single statute stating both principles and policies, together with provisions requiring their application to all Federal water resources activities irrespective of the agency or agencies concerned. Changes arising from these recommendations would, of course, not be applicable to existing contracts with project beneficiaries except upon their agreement. Nor do these recom-

(Continued on page 36)

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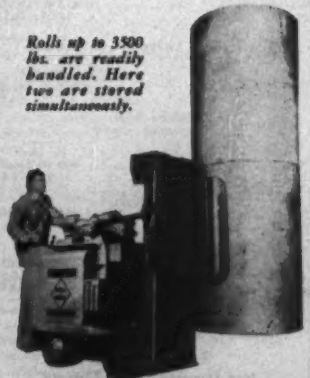

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Kraft— pr cwt., 40# base wgt.

Standard Wrapping Rolls	$7.75/ —
No. 1 Wrapping Rolls	8.25/ 8.50
Standard Bag	7.50/ —

Tissues— per ream 24x36 (480) 10 lbs. 2500 lbs or more

Wh. No. 1 Frd.	$1.95	/$2.25
Wh. No. 1 MG	1.95	/ 2.25
Wh. No. 1½	1.85	/ 2.15
Wh. No. 2	1.85	/ 2.15
Kraft Non-Tar	1.85	/ 2.15
White Non-Tar	1.95	/ —

Toilet— per case of 100 rolls—1 M sheets

Unbleached 4½x4½	$8.00/$8.25
Unbleached 4½x5	6.60/ —
Bleached 4½x4½	7.10/ 8.80
Bleached 4½x5	9.85/ —
Per Case of 50 rolls—2000 sheets	
Unbleached 4½x4½	$8.00/$8.25
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Wh. Jr. M'tif'd 9½x9½	$5.75
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Reg. Jute M.F. 40-lb., sheets*	18.60/20.00
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Varying freight allowances — Atlantic Ports

	U. S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$85.00/100.00	$85.00/100.00			
Sulphate, Bleached	135.00/200.00	175.00/ —	*180.00/187.00†		Competitive
Sulphate, Unbl. Northn.		147.50/153.00	*153.00/185.00*		
Sulphate, Unbl. Southn.					
Sulphite, Blchd. (Sftwd.)	135.00/165.00	145.00/ —	*175.00/ —	Competitive	Competitive
Sulfite, Blchd. (Hdwd.)	150.00/175.00				
Sulphite, Unblchd.	132.50/150.00	132.50/150.00	*153.00/165.00		
Sulphite, Unbl'd (Glassine)		143.00/146.50	*157.00/ —		
Soda, Blchd.	140.00/142.50	140.00/142.50			
Siderurgs, Pulping News	106.00/ —	106.00/ —			

* On dock. † Delivered.

Second Quarter Indications, Per Short Air-Dry Ton

Groundwood		$95.00/100.00		
Sulphate, Bleached	$135.00/175.00	150.00/200.00	$250.00/315.00	
Sulphate, Unbl. Northn.		145.00/170.00	265.00/295.00	$200.00/ —
Sulphate, Unbl. Southn.				
Sulphite, Blchd. (Sftwd.)	135.00/145.00	160.00/175.00	250.00/295.00	225.00/ —
Sulphite, Unblchd.		150.00/160.00	265.00/ —	200.00/ —
Sulphite, Unbl'd (Glassine)				
Soda, Blchd.		155.00/160.00		

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90-lb. 375 ft. GSI	$7.20	/ —
60lb. 600 ft. GSI	7.20	/ —
35-lb. 800 ft. GSI	8.28	/ —
35-lb. 500 ft. GSO	6.21	/ —

Boards, per ton—

Filled News	$107.50/ —
Plain Chip	105.00/107.50
Blchd. Mix. Ld. Chip	147.50/ —
White Pat. coated .020	170.00/ —
Kraft Liners 42 lb.	115.00/117.50
Kraft Corr. .009	122.50/126.00
Binders Boards	137.50/140.00

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Rag Content Bonds and Ledgers— White, 20 lb.

Bonds	4 Ctns.
	per cwt.
100% Rag Ex. No. 1	$70.45/$72.10
100% Rag	62.45/ —
75% Rag	48.15/ —
50% Rag	38.70/ —
25% Rag	31.65/ 33.00

Ledgers	4 Ctns.
	per cwt.
100% Rag Ex. No. 1	$72.65/ —
100% Rag	63.90/ —
75% Rag	49.40/ —
50% Rag	40.30/ —
25% Rag	33.00/ —

Sulphite Bonds and Ledgers White, 20 lb.

Bonds	4 Ctns.
	per cwt.
Watermarked	$19.00/$20.50
Plain	18.05/ 19.50

Ledgers	4 Ctns.
	per cwt.
Watermarked	$20.30/$21.80
Plain	19.35/ 20.80

White Book

Conversion Coated	Case
	per cwt.
No. 1	$23.40/$24.65
No. 2	21.90/ 23.40
No. 3	20.40/ 22.40
Machine Coated	
No. 1	$18.15/$18.40
No. 2	16.15/ 16.65
Uncoated	
No. 1 Antique (Watermarked)	$18.65/$19.15
Offset	17.40/ 19.90
A Grade E. F.	17.40/ 18.15
A Grade S. C.	18.15/ 18.65
B Grade E. F.	17.65/ —
B Grade S. C.	16.90/ 18.40

‡ Indicates a price change.

WASTE PAPER MARKET

The following quotations were gathered from major dealers in each market. They are an indication of the price range in which volume tonnage was moving on the date specified. Prices to mills, per ton, f.o.b. cars shipping point (includes brokers' fee.) PENDING OPS ROLLBACK, THESE PRICES REPRESENT CEILING RANGE.

	New York	Philadelphia	Boston	Chicago
	March 26	Jan. 25	March 26	Jan. 25
No. 1 Mixed Paper	$32.00/ 35.00	$32.00/ 35.00	$29.00/ 32.00	$33.00/ —
Boxboard Cuts	30.00/ 33.00	30.00/ 33.00	26.00/ —	38.00/ —
Mill Wrappers	30.00/ 35.00	30.00/ 35.00	30.00/ 36.00	35.00/ —
No. 1 News	37.00/ 41.00	33.00/ 40.00	28.00/ 31.00	38.00/ —
Over-issue News	40.00/ 45.00	40.00/ —	33.00/ 45.00	41.00/ —
Corrugated Containers	64.00/ 70.00	55.00/ 62.00	40.00/ 61.00	52.00/ —
New Corrugated Cuts	74.00/ 80.00	55.00/ 60.00	55.00/ 65.00	62.00/ —
Double Kraft Ld. Corr. Cuts	115.00/120.00	105.00/110.00	120.00/140.00	120.00/ —
100% Kraft Corr. Cuts	140.00/165.00	125.00/135.00	130.00/170.00	135.00/ —
Used Kraft Bags	85.00/ 95.00	80.00/ 85.00	85.00/116.50	65.00/ —
No. 1 Brown Kraft Paper	90.00/ 95.00	90.00/ 95.00	90.00/110.00	65.00/ —
Super Resorted Br. Kraft	100.00/105.00	100.00/105.00	100.00/125.00	90.00/ —
New Br. Kraft Env. Cuts	160.00/190.00	160.00/175.00	160.00/180.00	130.00/ —
New Br. Kraft Cuts	150.00/170.00	130.00/135.00	150.00/180.00	140.00/ —
No. 1 Gdwd Shvs.	80.00/ 85.00	75.00/ 80.00	80.00/ 85.00	75.00/ —
White Newsblanks	115.00/125.00	110.00/115.00	110.00/120.00	115.00/ —
No. 1 Flyleaf Shvs.	80.00/ 85.00	90.00/ 95.00	95.00/110.00	110.00/ —
No. 1 Soft Wht. Shvs.	180.00/190.00	170.00/175.00	175.00/195.00	175.00/ —
Super Soft Wht. Shvs.	190.00/200.00	190.00/200.00	190.00/210.00	185.00/ —
Hd. Wht. Shvs.	185.00/210.00	200.00/215.00	190.00/215.00	180.00/ —
Hd. Wht. Env. Cuts	200.00/245.00	225.00/ —	200.00/235.00	190.00/ —
New Manila Env. Cuts	140.00/150.00	160.00/165.00	140.00/165.00	115.00/ —
Col. Tab Cards	110.00/120.00	115.00/120.00	95.00/150.00	100.00/ —
Manila Tab Cards	170.00/185.00	165.00/175.00	160.00/200.00	165.00/ —
No. 1 Mixed Ledger	100.00/105.00	100.00/105.00	90.00/110.00	100.00/ —
White Ledger	130.00/140.00	125.00/130.00	125.00/140.00	125.00/ —
No. 1 Book & Mag.†	55.00/ 60.00	40.00/ 45.00	40.00/ 60.00	35.00/ —
No. 1 Rep'd. Hvy. Books‡	65.00/ 70.00	50.00/ 60.00	60.00/ 75.00	55.00/ —

* Delivered. † Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% groundwood.

RAG MARKET

New Domestic Cotton Cuttings
(Prices to Dealers, F.o.b. Ship. Pt.)

ALL PRICES NOMINAL

No. 1 White Shirts	$23.00/$24.00
No. 1 Unblchd. Muslins	23.00/ 24.00
Blchd. Canton Flannels	17.00/ 18.00
No. 1 Lt. Silesias	12.00/ 13.00
No. 1 Lt. Prints	9.00/ 12.00

Wht. Bk. Blue Overalls (Bleachable)	15.50/ 16.00
No. 1 Blue Overalls	7.00/ 8.00
Fancy Shirts	6.00/ 6.50
No. 1 Washables	5.50/ 6.00
Stanton Khaki Cuts	11.00/ 12.00
Mixed Khaki Cuts	9.00/ 11.00
Corduroy Cuts	4.75/ 5.25
Cottonades	7.00/ 7.50
Bkhd. Underwear Cuts	nominal
Unbkhd. Underwear Cuts	nominal

Old Domestic Cotton Rags

(Prices to Dealers, F.o.b. Ship. Pt.)

ALL PRICES NOMINAL

	Per 100 lbs.
Mixed White	$5.00/$5.50
Cotton Pants & Overalls	4.75/ 5.00
Thirds and Blues, Repacked	3.75/ 4.00
No. 1 Roofing Rags	3.00/ 3.10
No. 2 Roofing Rags	2.40/ 2.50
No. 3 & 4 Roofing Rags	2.20/ 2.30
Roofing Bagging	2.20/ 2.30

New Foreign Cotton Cuttings

(Prices to Mills, F.o.b. Dock, N.Y.)

	Per 100 lbs.
New Dark Cuttings	$4.75/$5.00
New Mixed Cuttings	4.75/ 5.25
Light Silesias	8.00/ 8.50
Light Flannelette	7.50/ 8.00
New White Cuttings	nominal
New Unbleached Cuttings	nominal
Fancy Shirt Cuttings	6.50/ 7.50
Light Prints	6.50/ 7.50
Bleachable Khaki, No. 1	6.00/ 6.50
Unbl. Khaki, No. 1	5.00/ 5.50

Old Foreign Rags

(Prices to Mills, F.o.b. Dock, N. Y.)

	Per 100 lbs.
No. 1 White Cottons	nominal
No. 2 White Cottons	nominal
No. 3 White Cottons	nominal
No. 4 White Cottons	nominal
Extra Light Prints	5.50/ 6.00
Old Light Prints	4.50/ 5.00
Med. Light Prints	3.75/ 4.00
Dutch Blue Cottons	4.00/ 4.50
Linsey Garments	2.75/ 3.00
Dark Cottons, Egyptian	2.50/ 2.75
Dark Cottons, European	2.75/ 3.00
Old Shopperies	2.40/ 2.50
New Shopperies	2.50/ 2.75

Bagging

(Prices to Dealers, f.o.b. N. Y.)

	Per 100 lbs.
Foreign Gunny	$8.00/$8.25
Domestic Gunny, No. 1	7.75/ 8.00
Heavy Wool Tares	7.00/ 7.50
Foreign Manila Rope	7.25/ 7.75
Domestic Manila Rope	7.00/ 7.25
Jute Strings	6.25/ 6.50
No. 1 Sisal Strings	7.25/ 7.50
Mixed Strings	nominal
Paper Mill Tares	5.25/ 5.75
No. 1 Scrap Burlap	
Foreign	6.50/ 6.75
Domestic	7.00/ 7.50
Austr. Wool Pouches	7.50/ 8.50
New Burlap Cuttings	7.50/ 8.00

MATERIALS

Aluminum, sulfate:		
coml. bags, whs.	cwt.	1.65
iron-free c.l.		3.25
Alcohol, ethyl:		
tax free, dms. c.l.	gal.	.77 / 1.02
deld. East Miss.		
Alcohol, methyl:		
Synthetic, Zone 1, dms. c.l. ft. alld.	gal.	.44
Casein, acid-prec.:		
dom. sh. pt. c.l.	lb.	.42 / .43
imp. ex. dock	lb.	.38½/ .39½
Caustic soda:		
c.l. whs. solid, 76%, cwt.		3.35
flak. & grd. 100-lb. drums		3.75
liquid 50% tanks		2.55
liquid 70% tanks		2.65
China clay:		
dom. air-float. filler, c.l. whs.	ton	10.00
water-washed, lump, filler		11.00
coating		17.60 /30.50
imported, ex whse.	short ton	15.20 /28.35
Chlorine:		
single-unit tanks, works	cwt.	2.70
multi-unit	cwt.	3.20 / 4.40
Formaldehyde:		
USP, inh. dms, c.l. whs.	lb.	.0600/ .0625
l.c.l. E. whs.		.0650/ .0675
Fuel oil:		
Bunker C, No. 6 Cal. hvy tanks, refinery	bbl.	1.95 / 2.15
light	bbl.	2.05 / 2.10
Hydrogen peroxide:		
USP, 35% clys. E. of Miss.	lb.	.34½/ .35½
Lime:		
hydrated, bags, whs. Buffalo	ton	13.50
Resin:		
B gum, drms, c.l. Savan.	cwt.	6.00
G, H, I, K	cwt.	8.70 / 8.79
FF, wood, dr.	cwt.	7.30
Resin size:		
70%, gum & pale grds, tank cars, south, sh. pt.	cwt.	6.80 / 7.00
Salt cake:		
dom. bulk, c.l. whs.	ton	17.00
whs. frt. all	ton	30.00 /32.00
Soda ash:		
light, 58%, bags, whs.		1.30
bulk	cwt.	1.30
Sodium silicate 40°:		
turbid, c.l. whs.	cwt.	1.20
l.c.l. whs.		1.55 / 1.95
Sodium peroxide:		
dms. c.l. E. of Miss.	lb.	.19
l.c.l. dr.	lb.	.19½/ .20
Soybeans, protein:		
chem. ind, whs. c.l. Cinn. and Chic.	lb.	.34 / —
Sulfuric acid:		
66° Be. clys. c.l. whs.	cwt.	1.75 / —
l.c.l. whs.	cwt.	2.05 / 2.60
Sulfur:		
crude, c.l. mines, contract, long ton		21.00 /22.00

ELIXMAN
CORES
CAPS

Straight wound paper cores made in sizes from 2" to 10" inside diameter with any thickness wall required.

Long draw protected slot caps of heavy gauge steel in all standard sizes.

Heavy duty caps with reenforced square hole. This patented feature of reenforcement gives added strength and durability.

Samples of caps or cores will be gladly submitted

ELIXMAN PAPER CORE COMPANY, INC.

CORINTH, N. Y.

f.o.b vessels Gulf	22.50	/23.50
Export, f.o.b. Gulf	23.00	
Sulfur dioxide:		
liquid, usual. cyl. wks.	lb.	.09
multi-unit cars	lb.	.0535
Starches:		
pearl corn, bags, c.l. wks.	cwt.	6.09 / —
white dextrines, c.l. wks.	cwt.	7.48 / —
potato, Idaho, c.l. wks.	cwt.	5.50 / —
potato, Maine, c.l. wks.	cwt.	5.25 / —
tapioca, conv. dextrines	cwt.	8.25 / 8.75
medium grds. Gulf and East Coast ports		6.75 / 7.50
low, Siam, on dock N. Y.		5.75 / 6.00
		nominal
Talc:		
domestic, 50-lb. sacks, c.l. wks.	ton	31.00 /30.00
Titanium dioxide:		
anastase, c.l. deld., bags	lb.	.21 / .21½
l.c.l. deld.	lb.	.22 / .22½
rutile, c.l. deld.	lb.	.23 / .23½
l.c.l. deld.	lb.	.24 / .24½

N.B.: For special market conditions, see *Trends*.

IMPORTS

IMPORTS AT NEW YORK WEEK ENDING MARCH 24

Newsprint

New York Journal American, Markland, Liverpool, N.S., 706 rolls.

New York Herald Tribune, Markland, Liverpool, N.S., 1559 rolls.

N. Y. World Telegram, Markland, Liverpool, N.S., 668 rolls.

N. Y. Daily Mirror, Markland, Liverpool, N.S., 338 rolls.

Brooklyn Eagle, Inc., Markland, Liverpool, N.S., 822 rolls.

Brooklyn Eagle Press, Inc., Markland, Liverpool, N.S., 54 rolls.

ELMENDORF TEARING TESTER

Measure the internal tearing resistance of paper, textiles and sheet materials in gram-centimeters. Dependent upon gravity for its operation, the readings must be correct. Any two Elmendorfs anywhere will perform alike under like conditions. Tearing resistance is the most practical test for wearing quality. It is a measure of service. T. A. P. P. I., A.S.T.M. and Federal Standard. Made in several sizes.

THWING-ALBERT INSTRUMENT COMPANY

5366 Pulaski Avenue
Philadelphia 44, USA

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Herald Statesman, Inc., Markland, Liverpool, N.S., 28 rolls.

N. Y. Times, Markland, Liverpool, N.S., 146 rolls.

Trade Union Service, Inc., Markland, Liverpool, N.S., 155 rolls.

W. D. Peck, Inc., Markland, Liverpool, N.S., 150 rolls.

Advance Pattern Co., Markland, Liverpool, N.S., 68 rolls.

Richmond Newspapers, Inc., (Richmond, Va.), Markland, Liverpool, N.S., 1882 rolls.

Pepper Printing Co., (Richmond, Va.), Markland, Liverpool, N.S., 70 rolls.

Nowy Swiat Publishing Co., Cornerbrook, Cornerbrook, 21 rolls.

Amerikai Magyar Nepszava, Inc., Cornerbrook, Cornerbrook, 30 rolls.

Wall Street Journal, Cornerbrook, Cornerbrook, 178 rolls.

Hearst Enterprises, Inc., Cornerbrook, Cornerbrook, 332 rolls.

N.Y. World Telegram, Cornerbrook, Cornerbrook, 484 rolls.

N.Y. Herald Tribune, Cornerbrook, Cornerbrook, 160 rolls.

N.Y. Times, Cornerbrook, Cornerbrook, 1022 rolls.

Gilman Paper Co., Cornerbrook, Cornerbrook, 19 rolls.

Montmorency Paper Co., La Petite Hermine, St. Johns, 3410 rolls.

Bowater Paper Co., Fort Avalon, Cornerbrook, Cornerbrook, 3773 rolls.

Montmorency Paper Co., Storfjeld, St. Johns, 1393 rolls.

Gevaert Co. of America, Steenstraete, Antwerp, 34 cs.

Surface Coated Paper

Lep Transport, Inc., American Ranger, London, 140 rols.

Raw Base Paper

Lep Transport, Inc., American Ranger, London, 140 rolls.

Baryta Coated Paper & Board

Lep Transport, Inc., American Ranger, London, 1 roll (paper), 106 rolls (board).

D. W. Hickey, American Ranger, London, 137 rolls (paper).

E. de Vries, Leerdam, Antwerp, 2 cs. (paper).

General Aniline & Film Co., Muncaster Castle, London, 51 drums (board).

Drawing Paper

Sea Shipping Corp., American Ranger, London, 1 cs.

H. Reeve Angel & Co. Inc., Queen Mary, Southhampton, 2 cs.

C. Bruning, Excellency, Marseilles, 11 cs.

H. Reeve Angel & Co. Inc., America, Southhampton, 2 cs.

Gummed Paper

B. F. Drakenfeld & Co., American Ranger, London, 4 cs.

B. F. Drakenfeld & Co., Sagaland, Liverpool, 47 cs.

Waxed Paper

C. S. Allen Corp., American Ranger, London, 22cs.

Tissue Paper

B. F. Drakenfeld & Co., American Ranger, London, 4 cs. (pottery).

B. F. Drakenfeld & Co., Sagaland, Liverpool, 22 cs. (gauze carbonizing).

Wallpaper

Inter Maritime Forwarding Co., American Ranger, London, 96 cs.

Orientex, Ltd., Stonewall Jackson, Yokohama, 2 cs. (grasscloth).

I. G. Dahlerup, Bolivia, Copenhagen, 10 pcls.

InterMaritime Forwarding Co., Muncaster Castel, London, 185 cs., 180 ctns.

InterMaritime Forwarding Co., American Builder, Liverpool, 19 cs.

S. K. Lonegren, Gripsholm, Gothenburg, 48 bxs.

Paperhangings

C. A. Haynes & Co., American Ranger, London, 53 bls., 5 cs.

C. A. Haynes & Co., Munca ter Castle, London, 73 cs.

Paper Caps

Dreuding Bros., Excambion, Genoa, 7 cs.

Filter Paper

H. Reeve Angel & Co. Inc., Muncaster Castle, London, 23 cs.

H. Reeve Angel & Co. Inc., Queen Mary, Southampton, 22 cs.

H. Reeve Angel & Co. Inc., America, Southampton, 38 cs.

J. Manheimer, American Harvester, Bordeaux, 105 bls.

Fougera & Co., American Harvester, Bordeaux, 29 cs., 15 bls.

Parchment & Parchment Paper

Andrews Paper Co., Queen Mary, Southampton, 1 cs.

Meadows Wye & Co., Queen Mary, Southampton, 1 cs.

Intermaritime Forwarding Co., Queen Mary, Southampton, 1 cs.

Stevens Nelson Paper Corp., Muncaster Castle, London, 2 cs. (paper).

A. Diniger Co., Havorn, Hamburg, 4 cs. (paper).

Binding Paper

Stevens Nelson Paper Corp., Liberte, Havre, 1 cs.

Writing Paper

H. W. Robinson & Co., Liberte, Havre, 2 cs.

R. Stone, Havorn, Hamburg, 25 cs.

Serviettes

(——) Sagaland, Liverpool, 16 crates.

Crepe Paper

Brundage Merchandise Co., Blydendyk, Rotterdam, 27 cs.

Wrapping Paper

Tidwester Forwarding Co., Havorn, Antwerp, 13 bls.

Southimco Mercantile Co., Blydensyk, Antwerp, 6 cs.

Miscellaneous Paper

Irving Trust Co., Stonewall Jackson, Yokohama, 7 cs.

Rags, Bagging, Etc.

(——), Steenstraete, Antwerp, 80 bls. jutewaste.

Saldor Trading Corp., Sagaland, Liverpool, 259 bls. jutewaste.

(——), Gripsholm, Gothenburg, 6 bls. rags.

A. de Vries Trading Corp., Havorn, Antwerp, 29 bls. scrap bagging.

Midwest Waste Materials Co., Havorn, London, 50 bls. rags.

Harris Goldman Co., Havorn, London, 65 bls. rags.

E. J. Lang, American Builder, Liverpool, 59 bls. old bagging.

(——), American Builder, Glasgow, 32 bls. paperstock.

E. J. Keller Co. Inc., American Builder, Glasgow, 143 bls. paperstock.

Mundane Co., Muncaster Castle, London, 74 bls. rags.

E. J. Lang, Muncaster Castle, London, 92 bls. old bagging.

(——), Muncaster Castle, London, 86 bls. sisal strings, 21 bls. silk cutting.s

Loumar Textile By Products Co., Muncaster Castle, London, 47 bls. cotton cuttings.

National City Bank, Samuel Bakke, Alexandria, 161 bls. bagging, 181 bls. old cotton rags.

Chase National Bank, Samuel Bakke, Alexandria, 79 bls. old cottons.

National City Bank, Samuel Bakke, Beirut, 182 bls. rags.

Brandwein Mazur Co., Blydendyk, Antwerp, 51 bls. old bagging.

O'Brien Products, Inc., Blydendyk, Rotterdam, 694 bls. old jute covers.

O'Brien Products, Inc., Blydendyk, Rotterdam, 694 bls. old jute covers.

National City Bank, Excellency, Genoa, 262 bls. old bagging.

E. J. Lang, Excellency, Trieste, 142 bls. scrap bagging.

Robbins Forwarding Co., American Ranger, London, 23 bls. cotton rags.

E. J. Keller Co. Inc., Kent County, Dunkirk, 75 bls. sisal waste.

Manufacturers Trust Co., Morihan, Marseilles, 83 bls. rags.
Robbins Forwarding Co., Morihan, Marseilles, 46 bls. rags.
(——), Morihan, Seville, 134 bls. jute waste bagging.
E. J. Lang, Exminster, Cochin, 100 bls. old jute rags.
(——), Paulina, Genoa, 65 bls. old bagging.

Old Rope

E. J. Keller Co. Inc., Havorn, London, 75 coils old rope.
(——), City of Bedford, Calcutta, 209 bls. old hemp rope cuttings.

Casein

Hercules Powder Co., Bowgran, Buenos Aires, 1000 bags (lactic).
H. S. Cramer, Kirsten, Buenos Aires, 1000 bags.
W. Diehl, Port Quebec, Melbourne, 1200 bags (lactic).
(——), Pioneer Isle, Melbourne, 2166 bags (lactic).
Bank of The Manhattan Co., Pioneer Isle, Melbourne, 800 bags (rennet).

Woodpulp

Acer Co., Cornerbrook, Cornerbrook, 750 bls. sulphite pulp.
K. O. Hohle, Ranenfjord, Drammen, 1475 bls. woodpulp.
Gottesman & Co. Inc., Idefjord, Trieste, 600 bls. sulphite pulp.
Price & Pierce, Ltd., Idefjord, Oslo, 1625 bls. bleached sulphite plp.
Elof Hansson, Inc., Idefjord, Oslo, 835 bls. mechanical pulp.

Woodpulp Boards

Parsons & Whittemore, Inc., Gripsholm, Gothenburg, 343 rolls, 74 bls.

IMPORTS AT NEWARK

Week Ending March 24

Jay Madden Corp., Orion, Abo-Turku, 362 rolls solid white woodpulp boards.
K. O. Hohle, Ranenfjord, Drammen, 3375 bls. woodpulp.

IMPORTS AT PHILADELPHIA

Week Ending March 24

Evening Bulletin, Cornerbrook, Cornerbrook, 2886 rolls newsprint.
Philadelphia Inquirer, Cornerbrook, Cornerbrook, 1391 rolls.
Baltimore News Post, Cornerbrook, Cornerbrook, 601 rolls newsprint.
C. Kura, American Ranger, London, 14 cs. metal coated paper.
Bulkley Dunton Pulp Co., Blydendyk, Rotterdam, 1100 bls. cellulose.
Elof Hansson, Inc., Idefjord, Oslo, 5365 bls. mechanical pulp.
(——), Samuel Bakke, Naples, 153 bls. old cotton rags, 120 bls. dark cotton rags.

IMPORTS AT BOSTON

Week Ending March 24

Elliott Addressing Machine Co., Pioneer Wave, Kobe, 75 cs. tengujo paper.
Stone & Downer Co., American Builder, Liverpool, 62 cs. wallpaper.
(——), American Builder, Glasgow, 16 coils 27 bls. old lines, 60 bls. old bagging.
American Cyanamid Co., Kirsten, Buenos Aires, 500 bags casein.
E. Lang, Bowgran, Buenos Aires, 500 bags lactic casein.
(——), Black Heron, Rotterdam, 500 bags casein.

IMPORTS AT NORFOLK

Week Ending March 24

(——), City of Bristol, Calcutta, 100 bls. old jute rags.
F. P. Gaskell Co., American Builder, Glasgow, 63 cs. coated paper for cigarette tips.
(——), American Builder, Glasgow, 73 bls. bagging, 139 bls. paperstock.
A. de Vries Trading Corp., Havron, Antwerp, 193 bls. scrap bagging.
D. Benedetto, Havorn, Antwerp, 86 bls., jute bagging.
E. J. Keller Co. Inc., Havorn, Antwerp, 56 bls. old bagging.
Castle Q Overton, Inc., American Ranger, London, 97 bls. waste bagging.
Charleston Overseas Forwarding Co., American Ranger, London, 314 bls. old bagging.
Castle & Overton, Inc., Exminster, Cochin, 100 bls. old jute rags.
International Corp., Exminster, Cochin, 100 bls. old jute rags.
Southern Waste Co., Exminster, Cochin, 200 bls. old jute rags.
Bunzl & Biach, Jalakirti, Calcutta, 100 bls. old jute rags.

IMPORTS AT BALTIMORE

Week Ending March 24

(——), American Builder, Glasgow, 85 bls. paperstock.
Parsons & Whittemore, Inc., Excellency, Marseilles, 183 bls. woodpulp.
China American Paper & Pulp Co., Excellency, Trieste, 1393 bls. chemical pulp.
O. Gerdau, City of Bedford, Calcutta, 10 bls. old jute rags.

NEW LITERATURE

Velan Engineering Co. Sales Copy, "The Velan Steam Trap Assembly—The 'Brain' Controlling Steam Using Equipment" and "Super-Fast Reaction Miniature Thermometer." Also brochures, "Super Precision Measuring Instruments for Humidity Developed for the Paper & Pulp Industry" and "Crustex," super-sonic device for prevention of solid lime crust formation in boilers.

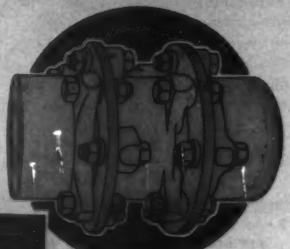
Yarnall-Waring Co. Bulletin EJ-1912, "Expansion Joints." Features and illustrates the Yarway Gun-Pakt and Glan-Pakt Expansion Joints. Includes

THOMAS *Flexible* ALL METAL COUPLINGS

FOR THOSE TOUGH PAPER MILL DRIVES

Patented Flexible Disc Rings of special steel transmit the power and provide for parallel and angular misalignment as well as free and float.

Thomas Couplings have a wide range of speeds, horsepower and shaft sizes:
½ to 40,000 HP
1 to 30,000 RPM



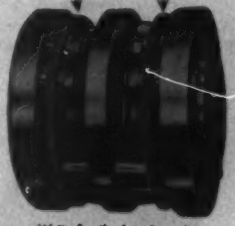
153" Sumner Iron Works Chipper—1500 HP @ 277 RPM—Soundview Pulp Co., Everett, Wash.

OTHER CHIPPER INSTALLATIONS
PUGET SOUND PULP & TIMBER CO. Bellingham, Wash.
CROWN-ZELLERBACH CORP. Port Townsend, Wash.
ST. REGIS PAPER CO. Tacoma, Wash.
CROWN WILLAMETTE PAPER CO. Camas, Wash.
BAYONIER, INC. Shelton, Wash.
WEYERHAEUSER TIMBER CO., PULP DIV., Everett, Wash.
BRITISH COLUMBIA PULP & PAPER CO., LTD., Woodfibre, B. C.

THE THOMAS PRINCIPLE GUARANTEES PERFECT BALANCE UNDER ALL CONDITIONS OF MISALIGNMENT.
• • •
NO MAINTENANCE PROBLEMS.
• • •
ALL PARTS ARE SOLIDLY BOLTED TOGETHER.
• • •
FOR SPECIAL COUPLING PROBLEMS CONSULT OUR ENGINEERING DEPARTMENT.

BACKLASH, FRICTION WEAR and CROSS-PULL are eliminated.
LUBRICATION IS NOT REQUIRED!

PATENTED FLEXIBLE DISC RINGS



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Note: Most conventional coatings fail under severe service conditions. They are neither designed nor suitable for such applications.

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prices and weights, Dimensions and typical installations.

U. S. Rubber Co. Bulletin, "Uscolite Plastic Products." Technical data on the new thermoplastic material which is "characterized by its unique combination of toughness with superior chemical resistance and low moisture absorption." Available as moldings, extrusions, and fabrications.

P. E. Madden & Co. Bulletin, "Madden Metering Pumps—For use with corrosive and abrasive fluids." Technical data and sales copy. Includes customers specifications blank.

Tremco Mfg. Co. Brochure, "Solving Roof Problems." Divided into 15 sections for easy reference and includes table of contents, photographs, drawings and diagrams. Explores such subjects as the various types of roofs, how they are built, what factors enter into their deterioration, how roof troubles can be diagnosed and treated.

A-B Svensk Travaru-Tidning, Book, "Handbook of the Northern Wood Industries," 1950 edition, 1425 pg., price 50 Sw. kronor. Revised directory of all firms engaged in the timber, woodpulp and paper industries of Scandinavia and Finland. Includes Export-Import data on commercial firms in same branches throughout the world.

Prentice-Hall, Inc., Book, "Modern Methods of Materials Handling," 348 pg, price $5.50. Studies made by the Educational Committee of The Material Handling Institute, Inc. on the problems involved in moving materials efficiently. Methods, types of equipment, and materials described are in actual use. Illustrated with cuts and diagrams of actual operations. Includes five studies in paper products handling, three in chemical.

American Cyanamid Co. Technical Bulletin No. 24, "Paper Softeners — Paper Products 2157-E and 2158-E." Introduces specialty chemicals to be added to paper stock by the "beater addition" method for the purpose of softening tissue and absorbent papers.

American Institute of Management. Bulletin, "Company Manners — Forty-four Do's and Don'ts in Corporate Public Relations."

Midwest Consumers of Waste Paper. Folder, "Earn Extra Money Quick! Collect Waste Paper." Contains recommendations for promoting and publicizing your waste paper drive, through newspaper stories, radio announcements and interviews, window display diagrams, etc.

American Forest Products Industries, Inc. Bulletin, "A Report for 1950." Annual report tells the step-by-step story of its activities in the cause of forest protection and wise woodland management.

A WATER POLICY

(Continued from page 30)

mendations contemplate a departure from the traditional recognition by Congress of rights to the use of water under State law as embodied in such legislation as the Reclamation Act of 1902.

Critical Decisions

The Nation is falling far short of reaching the goals set out in the policy outlined above. The design, operation, and financing of the present programs of Federal, State, and local agencies are such that their full potential benefits to the American people will not be realized.

In the chapters which follow, the Commission discusses in greater detail a series of adjustments in Federal and State policy which will make possible the realization of those benefits. They require major changes in planning, in evaluating projects, and in Federal and non-Federal financing. To adopt them now would accelerate progress in water resources development. The time never was more propitious for such changes. Nor was it ever more crucial.

This is because the Nation is now at a unique stage in water development. For several reasons, it is a stage which will never again recur.

First, the Nation is on the threshold of a tremendous increase in the volume of construction for Federal water projects. The cost of projects now under construction or authorized is equal to the entire cost of all Federal projects heretofore constructed. And the projects planned but not authorized account for costs at least four times larger.

Second, present mobilization plans impose heavy competing demands for construction materials, machinery, and men.

Third, accumulated experience with basin-wide programs in such diverse areas as the Columbia, the Missouri, and the Tennessee offers guidance never before available as to the wise planning of river development and as to the basic data essential to reaching sound decisions.

Fourth, technical information on water, land, forest, and mineral resources has accumulated rapidly in recent years. Much of this was not available to those who planned the authorized or proposed programs.

Fifth, most basins are relatively undeveloped. Only a few key projects have been built or started. There is still time to make the necessary changes if it is decided that radical alterations are required.

Once they are completed, major water control structures can be altered only with difficulty, or not at all. There are only a relatively few suitable dam sites, and once they are appropriated, the possibilities for economic multiple-purpose development are very limted.

Once an irrigation project is developed, it cannot be moved because unfavorable soil or climate factors are discovered. There is a sobering finality in the construction of a river basin development; and it behooves us to be sure we are right before we go ahead.

With these considerations in mind the Commission recommends that while readjustments are being made in the whole process of presenting river basin programs to Congress, the following policies apply:

1. Projects now under construction should be completed as rapidly as the national emergency permits.

2. Construction should be initiated on additional projects only as they are clearly shown to be in conformity with revised and approved basin plans, or as they are required to meet the emergency.

3. The review of basin programs and the collection of necessary data should be pushed as rapidly as possible.

4. Among the new projects to be considered for initiation, first priority should be given to safeguarding present and future projects as, for example, by reducing sediment or recharging depleted ground waters, as well as to developing new regional activity, as, for example, by the production and distribution of electric power.

This is a time for action, based on sober consideration of objectives and methods. Continuation of present policies, or lack of them, will mean a continuing waste of money and effort in the pursuit of conflicting goals. If the American people will examine the goals, and the policies under which progress is sought, much of the waste can be avoided, and much larger benefits for the Nation as a whole can be achieved.

SUPPLIERS

HAYDEN WIRE WORKS, INC., West Springfield, Mass., has erected an addition to its plant which increases floor space about 50 percent. Presently being installed is a complete metallizing plant, including a compressor and grit blast. Also, two lathes, one 48"—28 feet between centers, and related machine equipment for cylinder and roll work.

J. O. ROSS ENGINEERING CORP. has received the following orders: A Vapor Absorption System for the big machine at Gair Cartons, Bogota, N. J.; a new machine hood for the No. 5 machine at Riegel Paper Co., Milford, N. J.; two Grewin Systems for No. 5 and No. 1 machines at the West Virginia Pulp & Paper Co., Mechanicville, N. Y.; a machine hood and exhaust system and a Grewin System for the No. 3 machine of Groveton Papers Co., Groveton, N. H.

J. O. ROSS ENGINEERING CORP. announce that J. D. Lynch has joined the staff of sales-engineers at their Boston office.

Patent Abstracts

● ***In addition to abstracts on the technology of pulp, paper and related industries, miscellaneous abstracts which may provide useful information are included.***

U.S. 2,538,784 — Process for Identifying Normally Invisible Markings and Composition Therefor. Morris S. Kantrowitz and Earl J. Gosnell, Washington, D. C. Filed April 12, 1946 — Issued January 23, 1951.

A process for identifying paper having a normally invisible writing or design thereon, said writing or design comprising a soluble magnesium salt in an amount sufficient to yield a substantial local surface concentration of magnesium salt but insufficient to influence substantially the total magnesium content of said paper, which comprises treating such paper with a developing solution containing from 1 to 10 percent by weight of 8-hydroxyquinoline, from 1 to 15 percent by weight of ethylmonoethanolamine, the balance of the solution being substantially all methanol, whereby the writing or design remains invisible but becomes capable of fluorescence upon exposure to ultraviolet radiation, and then exposing

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You'll obtain all 5 of these basic needs when you select R-C Cycloidal Vacuum Pumps, built especially for paper mills:

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2. **NEGLIGIBLE FRICTION LOSSES**—no contact between impellers or impellers and casings.
3. **HIGHER SPEEDS**—permitting direct connection to standard motors, saving first cost, space and weight.
4. **FLEXIBILITY**—to meet varying demands; suction automatically overcomes resistance in system.
5. **DEPENDABILITY**—long-time, attention-free operation, due to simplified design and construction.

For many years, R-C Vacuum Pumps and related equipment have proved profitable investments for paper mills of any size. Bulletin 50-B-13 sent on request.

Roots-Connersville Blower Corporation
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ROOTS-CONNERSVILLE

ONE OF THE DRESSER INDUSTRIES

the thus-treated paper to ultraviolet radiation having a wave length between 3200 and 3800 angstrom units, whereby said writing or design is rendered visible during exposure.

U.S. 2,538,802 — Method of Manufacturing Calcium Carbonate. Milton O. Schur, Asheville, and Robert M. Levy, Brevard, N. C., assignors to Ecusta Paper Corporation, a corporation of Delaware. Filed May 3, 1947 — Issued January 23, 1951.

The process of producing precipitated calcium carbonate of a desired particle size range, which is characterized by the step of first preparing precipitated calcium carbonate having a major portion of its particles of a size substantially finer than desired and less than two microns in size, then selectively coarsening these fine particles so that the major portion thereof will be increased in particle size and fall within the range of approximately two to four microns in size, said selective coarsening being effected by introducing into an aqueous suspension of said fine calcium carbonate, a calcium hydroxide suspension having a concentration very much higher than that of a saturated solution of calcium hydroxide, and simultaneously therewith introducing carbon dioxide-containing gas, at such rates as to maintain a positive excess of free calcium hydroxide, and continuing the introduction of said calcium hydroxide and carbon dioxide gas until a major portion of the calcium carbonate particles in the resulting suspension have selectively increased in size and fall within the particle size range of approximately two to four microns, the aforesaid process not requiring the application of heat or control of temperature.

U.S. 2,538,926 — Method of Making Waterproof Fibrous Containers. Daniel Manson Sutherland, Morrisville, Pa. Filed March 25, 1946 — Issued January 23, 1951.

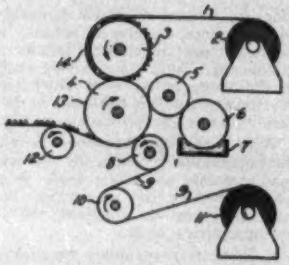
The process of making a waterproof container from a suspension of fibrous pulp, which consists of adding to the pulp a suspension containing wet powdered gilsonite and water, thoroughly mixing said pulp and suspension to form a pulp-gilsonite mix, producing a sheet from said mix on a suitable forming machine, drying the sheet at a temperature above the boiling point of water and below the melting point of gilsonite, removing excess material from the sheet to form container elements, repulping said excess material for re-use in the process, assembling the container elements in the form of a container, and raising the temperature of the container to a value above the melting point of gilsonite thereby fusing and disperaing the gilsonite among the fibres and forming a strong, rigid, waterproof container.

U.S. 2,539,093 — Nitric Acid Digestion of Straw. Henri Mainguet, Paris, France. Filed January 6, 1945 — Issued January 23, 1951.

The method of extracting cellulose from straw which comprises thoroughly impregnating said straw with a nitric acid solution containing from 2 to 3.33 grams of acid per liter at temperatures ranging from 15 to 40° C., causing this acid to react with said straw by raising the temperature of the straw thus impregnated to a temperature ranging from 73 to 83° C. within a period of about fifteen minutes, immediately stopping the reaction when this temperature is reached, and removing the incrustations from the straw thus treated.

U.S. 2,539,356—Apparatus for Making Fluted Containers. Melvin H. Sidebotham, Winchester, Mass. Filed December 11, 1947 — Issued January 23, 1951.

In a device for making corrugated webs for use as container elements, a corrugating roller with transversely positioned teeth on the outer periphery thereof, the teeth being spaced apart to provide a plurality of sets of teeth about the perimeter of the roller, with the radial space between the sets of teeth being greater than the radial space between the teeth in each set of teeth, and an annular element on one side of the roller adjacent to the ends of the teeth and of about the same diameter as the root diameter of the teeth on the corrugating roller; and a second corrugating roller, a plurality of transversely positioned teeth on the second corrugating roller



fashioned to fit the spaces between the teeth and to mesh with the teeth on the first corrugating roller, and an annular element adjacent to the ends of the teeth on the second corrugating roller and of approximately the same diameter as the outside diameter of the teeth on the said second corrugating roller.

Can. 470,686—Processes for Making Alkali Cellulose. Andreas Ruperti, Arlesheim, near Basel, Switzerland, assignor, by mesne assignments, to Ciba Limited, Basel, Switzerland. Filed June 22, 1944—Issued January 9, 1951.

Process for the manufacture of alkali cellulose of low water and alkali content suitable for the production of cellulose ethers by contacting cellulose at a temperature of 60-90° C. for ½ to 20 seconds with a concentrated aqueous solution of caustic alkali of a concentration at which the solution is still liquid at room temperature, and squeezing out the excess alkaline solution from the resultant soaked cellulose when wetting is complete and before complete swelling has taken place.

Process for the manufacture of alkali cellulose of low water and alkali content suitable for the production of cellulose ethers by contacting cellulose in form of a continuous sheet at a temperature of 60-90° C. for ½ to 20 seconds with a concentrated aqueous caustic soda solution of 40% strength, and squeezing out the excess alkaline solution from the resultant soaked cellulose when wetting is complete and before complete swelling has taken place.

STOWE-WOODWARD INSTALLED

In our story of Potlatch Forest Industries, which appeared in the issue of March 9, the following list of roll coverings supplied by Stowe-Woodward, Inc., was inadvertently omitted:

	Type Roll	*Size*
1	Wormed Cutter Squeeze Roll	14 x 14½ x 199
27	Table	10 x 10½ x 226
1	Bottom 3rd Press	30 x 32 x 216
2	Top Main Press—2nd and 3rd	31 x 32 x 218 Micarta
1	Lumpbreaker	15 x 18 x 220
1	Bottom Smooth Press	31 x 32 x 218 Micarta
1	Bottom Breaker Stack	30½ x 32 x 216
1	Top Breaker Stack	30½ x 32 x 218
1	Top Smooth Press	30 x 32 x 216
1	Bottom Size Press	30 x 32 x 216
1	Top Size Press	31 x 32 x 218 Micarta
12	Felt	16 x 16½ x 226
6	Wormed Felt	16 x 16½ x 226
1	Felt	20 x 20½ x 229
1	Top 1st Press	30 x 32 x 218
1	Paper	10½ x 12½ x 218½
1	Felt	10½ x 11½ x 226
1	Suction 1st Press	32 x 34 x 227½
1	Suction 2nd Press	32 x 34 x 227½
—		
62	Total	

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STAINLESS STEEL CASTINGS
FOR ALL EQUIPMENT EXPOSED TO CORROSION BY SULPHITE ACIDS OR OTHER CORROSIVE AGENTS
MICHIGAN STEEL CASTING CO.
DETROIT 7, MICHIGAN

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CHEMICAL PULP MILL ENGINEERS
500 WOOLWORTH BUILDING
WATERTOWN, NEW YORK
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SEABOARD AIR LINE R. R.
NORFOLK 10, VA.

Financial News

STOCK REPORT

	Per Share Earnings		Indic Annual Divid. Rate	Mar. 28 Approx. Market Price
	Calendar Year 1949	12 Mo. to Approx. 12/31/50		
PREFERRED STOCKS				
Armstrong Cork Co. $3.75 Cum.	$40.95*	$48.80*	$3.75	89½
Armstrong Cork Co. $4.00 Cum. Conv.	40.95*	48.80*	4.00	115⅞
Celotex Corp. 5% Cum.	6.80c	14.34h	1.00	17⅛
Champion Paper & Fibre $4.50 Cum.	60.09f	103.62	4.50	101½
Container Corp. of Amer. 4% Cum.	89.52	123.64	4.00	102¼
Crown-Zellerbach $4.20 Cum.	54.38g	67.00h	4.20	102¾
Dixie Cup Co. $2.50 Cum. Conv. Cl. A	10.93	16.31	2.50	55½
Flintkote Co. $4.00 Cum.	62.70	90.41	4.00	103½
Robert Gair Co., Inc., 6% Cum.	13.79†	21.28†	1.20	19½
International Paper Co. $4.00 Cum.	224.55	323.40i	4.00	104½
Kimberly Clark Corp. 4% Cum.	85.27	114.95h	4.50	108½
MacAndrews & Forbes 6% Cum.	61.59	63.03i	6.00	137½
Mead Corp. 4¼% Cum.	51.37	97.08	4.25	99½
Mead Corp. 2% Cum. Conv. 2nd	21.35*	40.05*	2.00	61¾
Pabco Products, Inc., 4% Cum. Conv.	56.46	120.13	4.00	101½
Rayonier, Inc., $2 Cum.	9.54	17.25	2.00	36¾
St. Regis Paper Co. 4.40% 1st A	30.74	65.23	4.40	92¾
Scott Paper Co. $3.40 Cum.	51.15*	65.41*	3.40	96
Scott Paper Co. $4.00 Cum.	51.15*	65.41*	4.00	104
Sutherland Paper 4½% Conv.	46.92	81.31	4.35	116¾
U. S. Gypsum Co. 7% Cum.	283.37	348.48	7.00	177
United Wallpaper Inc., 4% Cum. Conv.	2.14	0.84	2.00	25¾
West Virginia Pulp & Paper 4½% Cum.	61.28e	99.26h	4.50	109¾
COMMON STOCKS				
APW Products Co.	(d)0.31	0.45i	—	7⅜
American Writing Paper Corp.	.04	2.02	0.50	9⅜
Armstrong Cork Co.	6.17	8.13	3.75	86¼
Celotex Corp.	1.85c	3.78h	1.00	17½
Certain-Teed Prods. Corp.	2.84	3.92	1.50	17
Champion Paper & Fibre	5.15f	9.44	2.45	50¼
Congoleum Nairn Co.	3.04	3.29	2.00	26½
Container Corp. of America	4.23	5.87	2.50	35
Crown-Zellerbach	6.02e	7.34h	2.20	50⅜
Dixie Cup Co.	7.44	12.18	1.50	55
Eastern Corp.	0.04	4.30	1.00	20¼
Flintkote Co.	4.33	5.83	3.00	32½
Robert Gair Co., Inc.	2.11†	3.37†	0.70	12⅜
Great Northern Paper Co.	4.87	4.33	3.00	49
International Paper Co.	7.12	8.65i	2.50	50¼
Johns-Manville Corp.	4.83	7.22	3.50	57
Kimberly Clark Corp.	5.29	6.28h	1.80	44¾
MacAndrews & Forbes Co.	3.64	3.74i	3.00	40½
Marathon Corp.	3.29c	5.40h	1.40	43½
Mead Corp.	4.10	5.64	2.20	24⅜
National Container Corp.	0.95	2.41	0.75	12⅜
Pabco Products, Inc.	0.85	1.87	0.60	20½
Rayonier, Inc.	4.75	9.61	2.50	47½
Ruberoid Co.	7.93	9.64	3.18	58⅞
St. Regis Paper Co.	0.91	2.10	0.60	12¾
Scott Paper Co.	3.04	3.90	2.00	44¾
Sutherland Paper Co.	4.62	7.66	2.75	46
Union Bag & Paper Corp.	5.01	7.23	3.00	40⅝
United Board & Carton	(d)1.61b	2.71g	0.50	18½
U. S. Gypsum Co.	13.51	16.70	10.00	118½
United Wallpaper	(d)0.01	(d)0.01	—	3¾
West Virginia Pulp & Paper	8.58c	13.73h	5.00	76¼

(b) Year ended 11/13/49
(c) Year ended 1/31/50
(d) Deficit
(e) 12 months to 10/31/50
(f) 9 months to 12/31/49
(g) 12 months to 2/3/51
(h) 12 months to 1/31/51
(i) 12 months to 9/30/50
(*) Earnings per combined preferred shares
(†) Includes domestic and Canadian subsidiaries and 60% equity in Southern Paperboard Corp.

Hollingsworth and Whitney Co. report consolidated net income for 1950 of $2,025,976, after all charges including federal and Canadian taxes on income. After deducting preferred dividends, the balance amounted to $4.15 per share on the 450,000 common shares outstanding. These results compare with consolidated net income of $1,301,758 for 1949, equal after preferred dividends to $2.54 per share on the same number of shares outstanding.

During 1950 the company spent $6,813,916 for improvements in and additions to manufacturing facilities, of which $6,092,247 was expended on the Alabama plant and $717,050 for improvements at the northern mills.

During 1951 the company expects to spend approximately $5 million to complete plant expansion at Mobile and approximately $1,400,000 for improvements at its northern mills.

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For Economy

QUALITY PRODUCTION
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for both large and small PAPER MILLS
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for UNIFORMITY
APPLETON WOOLEN MILLS - APPLETON, WIS.

AMERICAN PAPER AND PULP ASSOCIATION'S PAPER PRODUCTION RATIO REPORT

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	Feb. 17	Feb. 24	Mar. 3	Mar. 10	Mar. 17
1951	102.2	102.5	102.7	101.5r	103.9
	Feb. 18	**Feb. 25**	**Mar. 4**	**Mar. 11**	**Mar. 18**
1950	93.0	93.9	95.8	96.8	96.5

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1950	92.6	93.6	96.7	93.4	96.4	97.7	85.3	99.6	96.1	101.2‡	100.3‡	93.7‡	95.8‡
1951	99.5‡	101.5‡											

‡ Preliminary.
r Revised.

COMPARATIVE YEARLY SUMMARIES

	1944	1945	1946	1947	1948	1949	1950	1951
Year to Date	88.6	88.2	98.1	104.9	100.7	93.1	100.5	100.9
Year Average	88.1	89.4	100.1	104.3	96.2	88.6	95.8‡	

PAPERBOARD OPERATING RATIOS†

	Feb. 17	Feb. 24	Mar. 3	Mar. 10	Mar. 17
1951	103	105	103	106	106
	Feb. 18	**Feb. 25**	**Mar. 4**	**Mar. 11**	**Mar. 18**
1950	92	90	88	89	92

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1950	88	92	91	92	91	94	82	100	96	102	101	95	94
1951	102	105											

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

NOTE: The chart shows the ratio through December 1950 on the basis of 6-day capacity. Beginning with January 1951 the ratio is shown on the new basis of normal 6- and 7-day capacities. Corresponding weekly and monthly ratios for 1950 on the new basis, shown in the tables above, are somewhat lower.

Paperboard operating ratios continue on the basis of a 6-day week.

† Per cents of operation based on "inch-hours" reported to the National Paperboard Association.

Obituaries

Frederick J. Baldwin, 83, prominent in the Michigan paper industry until his retirement in 1937, died at Kalamazoo on March 2. He became associated with the Munising Paper Co. in 1910. He acted as sales manager from 1920 until 1932 and for the succeeding five years, until his retirement, he was assistant general manager of the company.

Edward George R. Clarke, 60, a director and general manager of Canadian Nashua Paper Co., died in Peterborough, Ont. He was attached to the Toronto sales division of the Peterborough plant before being appointed sales manager in Peterborough. In 1945, he became general manager. He is survived by his widow, one daughter and three sons.

Arthur J. Roch, 56, for 25 years sulphite superintendent of the Thunder Bay division of the Abitibi Power and Paper Co., Ltd., died in Port Arthur, Ont. He was born in Appleton, Wis.

HAMMERMILL PLANS ADDITION

A permit was issued to the Hammermill Paper Co. of Erie, Pa., for a new building costing $166,000, City Building Inspector Daniel P. Dundon reported.

COMPLETELY PACKLESS
SELF-LUBRICATING
SELF-ADJUSTING
SELF-ALIGNING

Only Johnson Joints offer *all* these cost-cutting, trouble-saving, production - boosting benefits. *Only* Johnson Joints end *all* the shortcomings of old style stuffing boxes, without compromise of any sort. No wonder so many hundreds of mills, and so many machinery manufacturers, have standardized on Johnson Joints. Why not find out how quickly Johnson Joints can pay their own way in your mill.

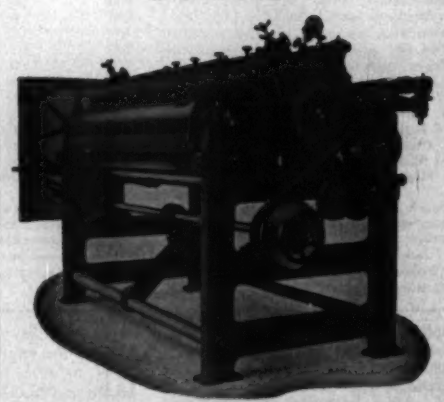
Johnson Rotary Pressure Joints

Write for catalog showing sizes and styles for all needs.

Installation in a midwestern mill — some of the 562 Johnson Joints purchased by this company.

The JOHNSON CORPORATION, 820 Wood Street, Three Rivers, Michigan

MODEL 28
ROLLER BEARING CUTTER



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LAWRENCE, MASS.
MAKERS OF
SINGLE, DUPLEX AND DIAGONAL PAPER CUTTERS
CUTTER KNIVES, PATENT TOP SLITTERS

RECORD PAPER & PULP STOCK VALVES "BONNETLESS SELF CLEARING - - - "RESIDUE POCKETLESS TYPE"

METALS — I.B.B.M. all iron, bronze or stainless steels, body parts plain or rubber lined.

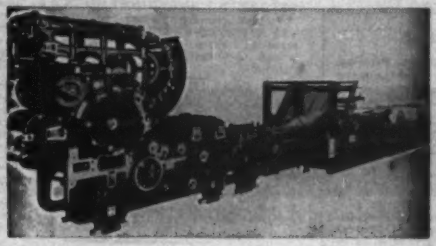
The photo of 24" Fig. 241 I. B. B. M. valve above illustrating the gate bottom wedge system for forced gate seating and "GUILLOTINE" edge for shearing fibre at seat also shows the packing box and yoke as separate units. Both adjustable.

- The "FAST THREADED" screw stem and ball bearing speeds valve operation.
- The packing box is extra deep, is adjustable and provided with specialized lubricated packings and special type gland and compression bolts.
- The yoke mountings are such that yokes for various methods of gate operation are interchangeable.
- Replaceable gate edge shoes are used in valves 10" and larger. These shoes are of special value when valves are installed stem and pipe horizontal.

"RECORD PRODUCTS EXTENSIVELY USED IN DEFENSE PROJECTS"

RECORD FOUNDRY & MACHINE COMPANY

LIVERMORE FALLS, MAINE, U. S. A.



Machine illustrated is a large S.O.S. Multiwall unit capable of making a maximum size bag 19" x 14" x 64".

Weber machines are known throughout the world.

Write in requesting our bulletin describing the complete line of Weber machines.

H. G. WEBER & CO., INC.

KIEL, WIS., U.S.A.

MEMBER, Packaging Machinery Manufacturers Institute.

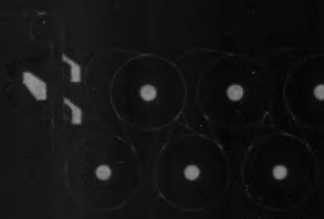
Red Ray Burners

increase *Drying Capacity*

Red-Ray Burners are extremely adaptable; they can be operated on natural gas, manufactured gas, butane or propane.

Controls and safeguards are furnished as required by the specific installation.

Further information concerning your particular drying requirements will be furnished by us without obligation. We invite your inquiry.



Red Ray Manufacturing Co., Inc.
455 West 45th Street · New York 19, N.Y.

ENGLISH ECCO CLAYS CLAYS

ECCO CLAYS TRADE MARK

UNIFORM SUPERIOR DEPENDABLE

English China Clays Sales Corporation
551 Fifth Avenue, New York City

CLEARING HOUSE

HELP WANTED

Let's Talk Sense — About TIDES

It's automatic that a rising tide lifts all the boats—but it seldom pushes them over sand bars and around the world. There is a rushing new tide in industry right now. Some companies are going to make money—but MANY companies and men are NOT going to win. One reason why so many *Fletcher* conditioned and placed men have achieved financial independence lies in the QUALITY of our employer clients. We probably spend more money every month searching for and handling jobs with exceptionally well managed, aggressive companies in expanding industries than the average executive can spend in a lifetime.

Manager
(Corrugated Cartons)

In the Central West, we have a valued client looking for a manager who KNOWS the corrugated box business. He will supervise production and sales—and should have a sales slant. This is a sound, prosperous, rapidly expanding organization able to pay what a genuinely first class man is worth to start—and willing to compensate for results in the future as they are secured. Mention our number A 925-3

Salesmen

We know of jobs, too, for salesmen—not the kind who are going to be a dime a dozen in the near future because of the war effort and restrictions on order taking—but young, ambitious, personable, HARD WORKING MEN . . . They will be trained on company time at company expense. Age should be under 35 years. Starting compensation will be $400 to $500 a month—plus expenses, including car allowance while traveling. Older, experienced salesmen with this company are making high incomes. Men educated in the Central West are preferred for these jobs. Locations—Central U. S. Mention our number A 953-1.

Now—you know if you are qualified for one of these positions and wish to keep on growing. If you are, please write us at once — frankly about yourself — in duplicate. Your confidence will be observed—there will be no charge to you if you secure one of THESE positions. ACTION COUNTS . . .

WILLIAM L. FLETCHER
Personnel Consultant
551 Boylston Street, Boston 16
Telephone CO 6-1363

M-30

SALESMAN WANTED

Manufacturer of sanitary paper products rated AAA-1 has opening in Metropolitan New York area for man who has had experience selling to jobber and consumer accounts. Will pay salary and expenses. Prefer mature men not subject to Military Service. Give full information on yourself, including details of previous experience, in letter addressed to Box 51-148 c/o Paper Trade Journal.

M-30

PRODUCTION MANAGER

Paper Converter New York City with mill sources seeks production manager for initiating department to manufacture any specific converted paper products such as file folders, doilies, small frozen food cartons, or any other paper specialty for national consumption. Write giving full experience. Address Box No. 51-140 care Paper Trade Journal.

A-6

EXPERIENCED SALES ENGINEER on Fourdrinier and Cylinder Machines and auxiliary equipment, free to travel, by well established machinery builder. In reply state background, experience, etc. Address Box 51-122 care Paper Trade Journal. A-4

HELP WANTED

MEN WANTED POSITIONS OPEN

We can place—pulp and paper mill managers; assistant managers; production manager; asst. supts.; beater engineers; machine tenders and back tenders; chemists, chemical engineers and laboratory men; master mechanics; plant engineers, civil engineers; mechanical engineers, designers and draftsmen; salesmen for paper mill equipment; time study men; Cylinder and Fourdrinier machine foremen. LET YOUR CONFIDENTIAL APPLICATION WITH US to keep informed of attractive positions open in the pulp and paper mills.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St., Boston 8, Mass.
SPECIALISTS IN PLACING PULP AND PAPER MILL EXECUTIVES M-30

PRODUCTION CHIEF

Paper converting, nationally known. Printing, coating, gumming, laminating, finishing operations. Lifetime position for top-flight production executive. Our people know of this ad. Send full details confidentially to President, Box 50-443, care Paper Trade Journal. TF

SALARIED POSITIONS $3,500 to $35,000. We offer the original personal employment service (established 41 years). Procedure of highest ethical standards is individualized to your personal requirements. Identity covered; present position protected. Ask for particulars. R. W. BIXBY, INC. —117 Dun Bldg., Buffalo, 2, N. Y. TF

RESEARCH-DEVELOPMENT

Large research and development laboratory has openings for two chemists or chemical engineers with paper mill experience. Ph.D. required for one position. Location: near New York City. Submit outline of qualifications. Address Box 51-139 Care Paper Trade Journal. A-4

PERSONNEL SERVICE ASSOCIATES, 115 State Street, Springfield, 3, Mass. Specialized Confidential Placement Service to the Paper and Allied Industries. Executive—Technical — Sales — General Personnel. Correspondence from employers and employees welcome. Men and positions always available. Personnel Consultants. M-30

WANTED—25 experienced paper mill Design and Layout Engineers. Men required for steel and concrete structural design, mechanical layout, piping design, and electrical design. In first letter give complete engineering experience, age, education, etc. Address Construction Engineer, P. O. Box 1844, Savannah, Ga. A-13

WANTED — TOP GRADE SALESMANAGER for an eastern chipboard mill. Fully experienced and capable. Furnish details of experience, capabilities and references. Excellent opportunity. Address Box 51-78 care Paper Trade Journal. TF

WANTED—Working Master Mechanic, for one machine board mill. Must be thoroughly experienced in repairs, maintenance, new installations and have thorough knowledge of boilers. In reply state age, experience and salary desired. Address Box 51-141 care Paper Trade Journal. A-6

BAG MACHINE ADJUSTOR—must be first class adjuster on Potdevin, Weber SOS Machines. Equally experienced on sacks. Flat and square machines, also dry cleaning bag machine. Knowledge of printing necessary. Address Box 51-112, care Paper Trade Journal. M-30

HELP WANTED

YOUNG MAN with Southern experience to organize small personnel-safety section Southern Kraft Mill. Address Box 51-132 care Paper Trade Journal. A-13

EXPERIENCED PAPER MACHINERY DESIGNER with special knowledge of reels, winders and cutters. Excellent opportunity with well established company. Address Box 51-49 care Paper Trade Journal. TF

WANTED — SALES ENGINEER — Experienced in Pulp and Paper Mills, for sales and service work. Excellent opportunity with old established machinery manufacturer. In reply, give resume of education, experience and current salary. Address Box 51-86 care Paper Trade Journal. TF

WORKING SUPERINTENDENT for small, fast growing Eastern mill making lightweight specialties. Cylinder machine experience essential. State qualifications and salary expected. Address Box 51-86 care Paper Trade Journal. TF

UNUSUAL OPPORTUNITY with progressive concern for an experienced pulp mill engineer. Must have chemical background and know kraft bleaching. Location in New Jersey. Address Box 51-123 care Paper Trade Journal. M-30

WANTED—Tour Boss for one machine board mill making Test Liner, Imitation Kraft Wrapping Paper, Folding and set-up Boxboards. In reply state age, experience and salary desired. Address Box 51-142 care Paper Trade Journal. A-6

GRADUATE MECHANICAL ENGINEER—With sufficient ability and experience in the manufacture of fine papers to be responsible for development program and to design, layout and supervise installation of equipment in midwestern mill. Address Box 51-151 care Paper Trade Journal. My-25

MECHANICAL DRAFTSMAN for general paper mill layout, machinery, piping, etc. Located in North Central Wisconsin. Would consider Mechanical Engineering graduate without experience. State qualifications and salary expected. Address Box 51-154 care Paper Trade Journal. A-20

WANTED — EXPERIENCED, COMPETENT PURCHASING AGENT for an eastern chipboard mill. Must be capable and fully experienced. Furnish details of experience, capabilities and references. Excellent opportunity. Address Box 51-153 care Paper Trade Journal. TF

SITUATIONS WANTED

PLANT MANAGER—Paper and Board and their conversion; wants challenging opportunity. Highly successful in organization; administration; labor relations and high level production. Presently employed. Address Box 51-43 care Paper Trade Journal. M-30

PAPER MILL ENGINEER—Plant Engineer with design experience sulphite pulp, cylinder and Fourdrinier specialties, desires connection. Address Box 51-121 care Paper Trade Journal. TF

PAPER MILL ENGINEER with managerial experience and cost control minded, desires a change offering greater opportunity. Address Box 51-118 care Paper Trade Journal. A-6

KRAFT MILL MAN with chemical training and 30 years successful experience with production, quality and cost control, using soft and hard woods; also experienced in getting new plants ready and into operation. Anyone interested please address Box 51-128 care Paper Trade Journal. M-30

SUPERINTENDENT—With long record as a Practical Paper Maker on modern high speed cylinder machines making Boxboard and Specialties. A Production Man. Address Box 51-155 care Paper Trade Journal. A-13

FOR SALE

FOR SALE

3—Postdevin garment bag machines. One is capable of making banana bags. Both have two-color oil printers.

THE TRIANGLE PAPER BAG MFG. CO.
Box 707
Covington, Kentucky
M-30

FOR SALE

1—Waldron two sided Synchroset Coater —146" wide, practically new.

J. J. ROSS COMPANY
250 Frelinghuysen Ave., Newark, N. J.
Tel. Bigelow 3-3720
M-30

FOR SALE—One Bagprint B-10 flat and square bag machine, mfg. size 3x5 to 8½x18. Can presently be seen in operation. Address Box 51-97 care Paper Trade Journal. M-30

FOR SALE

CURRENT OFFERINGS

42" Moore & White Sheeter, with or without layboy.
58" Finley Sheeter.
84" Hamblet Sheeter, only 6 yrs. old, with 8 roll Back Stand.
100" Horne single knife Sheeter.
68" Oswego mill type Power Cutter, with power back gauge.
Morrison #4 and 32 L. G. Box Stitchers.
Model 45 Economy Hand Baler.

(Send for Current List.)

THOMAS W. HALL COMPANY, Inc.
120 West 42nd St., New York 18
(Plant at Stamford, Conn.) TF

FOR SALE—74" Knowlton Traveling Shear Cut-off Knife.—Bargain. Address Box 51-105 care Paper Trade Journal. TF

FOR SALE

FOR SALE

Approximate—15 ton per week Paper Mill Sweepings. Located—Eastern Penna.

Address Box #51-148, care Paper Trade Journal.
M-30

FOR SALE

Three Machine Mill in East. Tissue and Lightweight Grades. Now Operating.

Address Box #51-144, care Paper Trade Journal.
M-30

FOR SALE—1—Ten Roll Lobdell Calender Stack, 110½ inch face with Doctors, Levers and Marshall Drive. Address Box 51-149 care Paper Trade Journal. A-6

ROSS PAPER MACHINERY CO

[illegible] PASSAIC STREET
NEWARK 4, N. J.

MACHINERY WANTED FOR OUTRIGHT PURCHASE

Paper Machines, Paper Mill Machinery and Converting Equipment.

WE OWN WHAT WE ADVERTISE

BEATERS
3—Dilts 750 lb. Iron Tub. Roll 40" face x 30" diameter.

BELTING—NEW
32 feet 5" (3 ply Goodyear Rubber Belting.
100 feet 6" 4 ply Gilmer Duck Transmission belt.

CALENDER ROLLS
46 Chilled Iron Rolls—Assorted sizes.

CALENDAR STACKS
1—3 roll—82".
1—3 roll—62".

CONVEYOR
1—18½ ft. long x 30" wide—with motor.

CORE CUTTERS
1—Cameron with 7" x 11½" mandrels.

COUCH ROLLS—Rubber
1—110" face x 20" diameter. New.

CYLINDER MOLDS
1—130" face x 30" diameter, with stainless steel shafts.

DRIVES—ENCLOSED HERRING BONE GEAR
2—Falk right angle 75 hp—ratio 6.31-1.
1—Falk straight 200 hp—ratio 1.67-1.
1—Falk straight 100 hp—ratio 5.12-1.

DRYERS
2—134" face x 62" diameter.
1—62" face x 90" diameter.
1—77" face x 48" diameter—with gear.
1—120" face x 16" diameter—Baby Dryer.
10—136" face x 62" diameter.
1—60" face x 30" diameter.
1—102" face x 60" diameter, with bearings.
5—100" face x 60" diameter—with gears and bearings.
2—110" face x 62" diameter with bearings and gears.
1—112" face x 60" diameter.
1—84" face x 30" diameter.
1—109" face x 62" diameter Cropsey Dryer.

EXTRACTOR ROLLS
1—Downingtown Extractor Roll 107" face x 24" diameter, Anti friction bearings.
1—Downingtown Extractor Roll 130" face x 24" diameter. Anti friction bearings.

FILTER PRESS
1—New Sperry filter press, size 12, type 41.

FILTERS
1—Oliver Vacuum Filters. Cylinder 10' face x 5'3" diameter. Steel vat. 1200 GPM capacity.

FLAT SCREENS
2—8 plate Sandy Hill Roller Shoe with scrapers.
1—Harmon 12 plate.
1—Sandy Hill 12 plate roller shoe.

JORDANS
1—20 Miami, for motor drive.
1—Jones Majestic with base and couplings—
2—23 Appleton with base and coupling.
1—Jones Majestic, Stainless Steel Fitting.
1—E. D. Jones 21 high speed Jordan with base and coupling—ball bearings.

LAMINATOR
1—Downingtown 92" Laminator, with 4 Dryers 48" diameter.

PULP EQUIPMENT
1—Mills & Merrill 217 Pulpwood shipper.
1—Bird ball bearing Pulp Screen. Practically new. Used 6 months.
4—APHEW Ball Bearing Pulp Screens—36 ton capacity.

PULPERS
5—22 Lamaster with enclosed Falk Drives. New.

PUMPS
44—Centrifugal Pumps, open & closed impellers. Direct connected or Belt Driven. Extended base for motor. Assorted capacities and heads. Most used less than one year. Also new Gaulds Pumps.

REDUCERS
1—Link Belt 40 h.p. Ratio 2.2-1. 880 r.p.m.-. 327 r.p.m.

ROLLS—PRESS, COUCH, etc.
32—Press rolls, brass and rubber covered.
14—Couch rolls, brass and rubber covered.
256—Brass and steel carrying rolls.

ROTARY SCREENS
4—22A Bird, fully rebuilt with new vats, plates, etc.—enclosed drive.
1—22 Bird—stainless steel vat.
1—32 Bird—iron vat.

SAVEALLS
1—Oliver, Vacuum type, cylinder 120" face x 60" diameter, with steel vat.

SCREW PRESSES
1—Valley Voith Screw Press Size 2.

SHEETERS
1—40" Kidder Duel Sheeter.
1—64" Duplex Dilton with 15 roll Bank Stand.

SHREDDERS
1—American 27" Hammermill, anti-friction bearings.
1—Sprout Waldron Cutter—type F-11—20" knives. Used 30 days.

SLITTERS AND WINDERS
1—Pusey & Jones 100" high speed slitters and rewinders.
1—Kidder 120" Paper Machine Slitter and Winder —32" rewind.
1—Moore & White 120" Four Drum Paper Machine Slitter and Winder—40" rewind.
1—Beloit 120" Paper Machine Slitter and Rewinder—40" rewind.
1—62" Langston Type 2 shaft rewinder.

STOCK PUMPS
2—Beloit 10 x 20 Triplex with steel Link Belt Chain Drives.
1—Shartle 10 x 20 Duplex.

SUCTION COUCH ROLLS
1—Millspaugh 23" diameter x 139¾" suction face.

SUCTION PRESS ROLLS
1—Millspaugh 13½" drilled face x 32" diameter with stand & drive.

WATER FINISH UNIT
1—Valley Hirsmake Unit for water finish on paper—120" Double.

WAXING MACHINE
1—Waldron 60" Waxer and Impregnator.

WHY LIST YOUR EQUIPMENT? — WE WILL BUY IT.

FOR SALE

CAMERON SLITTERS

1—42" and 1—32" type 24—Model 3A Duplex.

1—40" type 40.

1—32" type 40—Model 2A.

OTHER SLITTERS

1—50" Kidder Model SL Score Cut.

1—60" Hammersly.

1—45" Hudson-Sharp. For cutter box and shelf roll papers.

1—42" Langston Center Wide Duplex S&R.

1—36" Shear Cut Cellophane & Paper S&R-⅛" Width and Up.

1—30" Langston Type A Shear-Cut S&R.

1—30" Fales—Model B.

POWER PAPER CUTTERS

9—Seybold: 38", 54" and 64" 20th Century, 50" 10Z, 40" 6Z, 50" Precision with Auto-spacer, 50" Dayton; 54" Holyoke; 3—Oswego: 38", 44" and 57"; 1—Sheridan 50"; 1—Dexter: 57"; 2—Acme: 32" and 42"; 1—S&W Under Cut 63".

OTHER EQUIPMENT

4—Spiral Tube Machines for Small Tubes.

1—48" Mayer Coating Machine Co.'s gumming machine for Kraft paper.

1—Paper Converting Machine Co. ¼ fold, 3 web napkin folder with embossing attachment.

2—Hudson Sharp, 3 deck napkin folders 10" x 10", with embossing attachments.

1—Potdevin Model 83 Sack Machine. 1 to 5 lb. range.

2—Lockport Flat & Square Bag Machines. One #2, one #3.

1—20" Champlain 4-color Rotogravure Press.

1—32" 3-color Baggrint Machinery Corporation's Aniline Printing Press for tail-printer on Bag Machine.

1—NEW 24"—2-color aniline roll to roll press.

1—102" Beloit Duplex Rotary Sheeter, 10 roll backstands and M&W Layboy.

2—Duplex Sheeters, 1—64" Dillon and 1—94" Moore & White.

1—45" German, Dornbusch Embossing machine with two sets of embossing rolls.

1—38" Holyoke Roll to Roll Embosser. Heavy Type.

1—42" Hobbs Mfg. Co.'s Embosser, ball bearing throughout.

3—Potdevin Squeeze Roll Waxing Machines, one 80", one 82" and one 84" wide.

1—14" x 28" Meisel, R.F.B. & P. Press, with all attachments for continuous register forms.

1—46" 6 Roll, 1—67" 9 Roll and 1—84" 9 Roll Holyoke Super Calender Stacks.

1—1000# Iron Tub Beater. Roll 48"x48"—72 bars.

2—#2 Moore & White Screens. Plates cut .020".

1—Lamoye Pulper.

1—60" Meisel 3 color Roll to Sheet Adjustable Rotary Printing Press. Centered printing to register on sheets 20" to 30" in length by ¼".

1—Emerson Jordan—Belt Driven.

GIBBS-BROWER COMPANY, INC.
Reply to Room 903
21 East 40th St., New York 16, N. Y.
M-30

FOR SALE

FOR SALE

57 dandy rolls 10" dia. x 102" both trunnion and journal type. Can be recovered—$50.00 each.

Box 51-137, care Paper Trade Journal.
A-13

PAPER COATING MACHINERY MANUFACTURERS — Waxing, Oiling, Carbon Laboratory Coating and Treating and Flat Ream Measuring and Converting Machines. New improvement. THE MAYER MACHINE COMPANY, INC., 1313 Buffalo Road, Rochester, 11, N. Y. TF

FOR SALE—84" Seybold 20th Century Automatic Power Cutter, mill type, with 7½" H.P. A. C. motor; in good working condition, immediately available. Address Box 51-126 care Paper Trade Journal. A-6

WANTED

WANTED IMMEDIATELY

Used Paper Cutter Guillotine Type —64 to 66" wide.

Also Web Multifold Paper Towel Converting Machine.

Address Box 51-147
care Paper Trade Journal
M-30

WANTED—Steady supplier of 10 lb. jumbo roll tissue for toilet paper purposes. Can use 3 to 4 cars monthly. Please advise particulars, together with samples and price. Address Box 51-133 care Paper Trade Journal. M-30

WANTED—W & P Shredders, Evaporators Generators and Boilers, Slitters, Cutters Hydraulic presses, Sheridan Presses, Dryers. Address Box 51-89 care Paper Trade Journal. TF

WANTED—One 40" Waxer, either Hudson Sharp or Mayer with or without chill unit. Address Box 51-98 care Paper Trade Journal. M-30

WANTED

Serviceable Grocery Bag Machine
8 through 20 lb. sizes.
Recent Model Potdevin preferred.

Address Box 50-450, care Paper Trade Journal. TF

WANTED

4—36" diameter x 73" Face Dryers

4—28" diameter x 66" Face Dryers

American Paper Products Company
15 Lane Street, Waltham 54, Mass.
A-27

WANTED

USED DIGESTER WANTED

In good condition. 2200 cu. ft. or greater capacity. Unlined for Kraft Pulp. 120 lbs. steam pressure. Send location, details, price to Box No. 56-146 c/o Paper Trade Journal.
M-30

WANTED

Sprout Waldron or Bauer Refiner with or without. Drive 440/3/60.

THE CELOTEX CORPORATION
120 S. LaSalle St.
Chicago 3, Illinois
M-30

WANTED

Cylinder Paper Mill in East. Suitable for Manufacture of Board—.016" or Heavier.

Address Box #51-143, care Paper Trade Journal.
M-30

WANTED—Brightwood Box Machine, Shredders, Evaporators, Generators and Boilers, Slitters, Cutters, Hydraulic presses, Sheridan Presses, Dryers. Address Box 51-88 care Paper Trade Journal. TF

WANTED TO BUY or lease, Paper Mill or Pulp & Paper Mill. Will retain present management. Address Box 51-138 care Paper Trade Journal. M-30

WANTED—One 60" Knife Barker, also one 50"-70" Chipper. Address Box 51-152 care Paper Trade Journal. A-13

WANTED—Sack Machine ⅛ or larger. Address Box 51-156 care Paper Trade Journal. A-6

WANTED—60" to 72" Hamblet Sheeter with layboy, for Defense Work. Other makes considered. Address Box 51-157 care Paper Trade Journal. A-13

OPPORTUNITY

Wanted: partner with capital to help organize and manage small mill for highly profitable paper product. Process simple but demands highest quality and skill. Competition limited. Have 15 years practical experience in this specialty. Market nation-wide. Need additional capital to insure success. Address Box 51-130 care Paper Trade Journal. A-6

REPRESENTATIVE

REPRESENTATIVE

REPRESENTATIVE with more than 20 years mill and merchandising experience, representing foreign mills, will open own office in New York City. Interested in taking on two or three additional lines of paper or paper specialty products. Commission basis.

Address Box 51-158 care Paper Trade Journal.
M-30

BUY U. S. SAVINGS BONDS

WHERE TO BUY

ABRASIVES
Monsanto Chemical Co.
Naugatuck Chemical
Division of U. S. Rubber Co.
Norton Co.

ADHESIVES
American Cyanamid Company
Plastics & Resins Division
E. I. Du Pont De Nemours & Co., Inc.
The Goodyear Tire & Rubber Company
Monsanto Chemical Co.
Morningstar, Nichol, Inc.
National Starch Products, Inc.
Nopco Chemical Co.
Plaskon Division,
Libbey-Owens-Ford Glass Co.
Stein, Hall & Co., Inc.

AGITATORS
American Paper Machy. & Engrg. Works, Inc.
Appleton Machine Co.
The Cowles Company
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
D. J. Murray Mfg. Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.
Shartle Brothers Machine Co.

ADJUSTABLE SHAKE MOTION
Manchester Machine Co.

ADJUSTABLE TILTING MOTOR BASE
Lovejoy Flexible Coupling Co.

ALLOYS
Michigan Steel Casting Co.

ANTIFOAM
American Cyanamid Company
Industrial Chemicals Division
National Aluminate Corp.
Nopco Chemical Co.

APRON CLOTH
Williams-Gray Co.

BAG MACHINES
Dilts Machine Works
Potdevin Machine Co.
The Sandy Hill Iron & Brass Works
Smith Winchester Mfg. Co.
Weber, Herman G., & Co., Inc.

BALL MILLS
F. L. Smidth & Co.

BARK BURNER
Combustion Engineering-Superheater, Inc.
Hoffs Company, Inc.
Nichols Engrg. & Research Corp.

BARKERS AND CHIPPERS
Allis-Chalmers Mfg. Co.
Appleton Machine Co.
Carthage Machine Co.
D. J. Murray Mfg. Co.
Valley Iron Works Co.

BARS
Dilts Machine Works
E. D. Jones & Sons Co.
The Moore & White Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

BASIC WEIGHT SCALES
Thwing-Albert Instrument Co.

BEARINGS
The Bagley & Sewall Company
Black Clawson Company
E. D. Jones & Sons Co.
Link Belt Company
Magnus Metal Corp.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
SKF Industries
Stephens-Adamson Mfg. Co.
Timken Roller Bearing Co.
Valley Iron Works Co.

BEATERS AND JORDANS
American Paper Machy. & Engrg. Works, Inc.
The Appleton Machine Co.
Black Clawson Company
Dilts Machine Works
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Morden Machines Co.
J. J. Ross Company
Ross Paper Machy. Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

BED PLATES
Bahr Brothers Mfg. Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Farrel-Birmingham Co., Inc.
E. D. Jones & Sons Co.
Lukenweld Div., Lukens Steel Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

BELTING
Allis-Chalmers Mfg. Co.
Goodrich, B. F., Co.
The Goodyear Tire & Rubber Company
Link Belt Company

BIN DISCHARGERS
Hoffs Company, Inc.
Stephens-Adamson Mfg. Co.

BLEACHING AGENTS
E. I. Du Pont De Nemours & Co., Inc.
General Dyestuff Corp.
Rohm & Haas Co.
Virginia Smelting Co.

BLEACHING APPARATUS
E. D. Jones & Sons Co.
Perkins & Sons, Inc., B. F.
Moore & White Co.
Niagara Alkali Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

BLOW PIPES & PITS
Carthage Machine Co.
Kalamazoo Tank & Silo Co.
Moore & White Co.
Murray Mfg. Co., D. J.
Walworth Company

BOILERS
Babcock & Wilcox Co.
Combustion Engineering-Superheater, Inc.

BOTTOMS
Kalamazoo Tank & Silo Co.
Valley Iron Works Co.

BOXBOARD SCALES
Thwing-Albert Instrument Co.

BRUSH ROLLS
M. W. Jenkins Sons, Inc.

BRUSHES
M. W. Jenkins Sons, Inc.
Geo Reidel & Son

BURSTING TESTERS
B. F. Perkins & Son, Inc.
Testing Machines, Inc.

CALENDERS
The Bagley & Sewall Company
Black Clawson Company
Downingtown Mfg. Co.
Farrel-Birmingham Co., Inc.
Lobdell Co.
Edward J. McBride
The Moore & White Co.
Perkins & Sons, Inc., B. F.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

CARRIER ROPE
Williams-Gray Co.

CASEIN
American Cyanamid Co.
Industrial Chem. Div.
Bunge Pulp & Paper Co.
Hercules Powder Co.

CASTINGS
Appleton Machine Co.
The Bagley & Sewall Company
Black Clawson Company
Babcock & Wilcox Co.
Carthage Machine Co.
Dilts Machine Works
Downingtown Mfg. Co.
Farrel-Birmingham Co.
Hamblett Machine Co.
Lobdell United Co.
Magnus Metal Corp.
Michigan Steel Casting Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Walworth Company

CENTRIFUGAL MACHINERY
Bird Machine Co.
Nichols Engrg. & Research Corp.
Ross, J. O., Engrg. Co.
Shartle Brothers Machine Co.

CHAINS
Stephens-Adamson Mfg. Co.

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Hercules Powder Co.

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Bunge Pulp & Paper Co.
Calco Chemical Co.
Calgon, Inc.
Dow Chemical Company
E. I. du Pont de Nemours & Co., Inc.
General Dyestuffs Corp.
Geigy Co., Inc.
B. F. Goodrich Chemical Co.
Gottesman & Co.
Hercules Powder Co.
Hooker Electrochemical Co.
The Kinsley Chemical Company
Monsanto Chemical Company
National Aluminate Corp.
Naugatuck Chemical Division of U. S. Rubber Co.
Niagara Alkali Company
Nopco Chemical Co.
Pittsburgh Plate Glass Co., Columbia Chemical Division
Rohm & Haas Co.
Virginia Smelting Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

CHESTS

The Bagley & Sewall Company
E. D. Jones & Sons Co.
Kalamazoo Tank & Silo Co.
Shartle Bros. Mch. Co.

CLEANING MATERIALS

American Cyanamid Company Industrial Chemicals Division
The Dow Chemical Company
E. I. du Pont de Nemours & Co., Inc.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Pittsburgh Plate Glass Co
Wyandotte Chemicals Corp., J. B. Ford Division

CLUTCHES

Appleton Machine Co.
The Bagley & Sewall Company
Black Clawson Company
Farrel-Birmingham Co.
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
Shartle Bros. Mch. Co.
Stephens-Adamson Mfg. Co.

COATING MACHINERY

Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Hudson Sharp Machine Co.
The Mayer Machine Co., Inc.
Moore & White Co.
Pardevin Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corporation, John
Weber, Herman G., & Co., Inc.

COATING MATERIALS

American Cyanamid Company Industrial Chemicals Division
E. I. Du Pont De Nemours & Co., Inc.
B. F. Goodrich Chemical Co.
The Goodyear Tire & Rubber Company
Hercules Powder Co.
J. M. Huber Corp.
Monsanto Chemical Company
Naugatuck Chemical Division of U. S. Rubber Co.
Nopco Chemical Co.
Plaskon Division, Libbey-Owens-Ford Glass Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

COILS

The N. P. Bowher Co.

COMPLETE FOURDRINIER ROLL GRINDING

Manchester Machine Co.

COMPRESSORS

Allis-Chalmers Mfg. Co.
Nash Engineering Co.
Roots-Connersville Blower Corp.

CONDENSATE FILTERS

Hungerford & Terry, Inc.
The Permutit Company

CONSISTENCY REGULATORS

Askania Regulator Co.
Bird Machine Company
DeZurik Shower Company
Paper & Industrial Appliances

CONSTRUCTION CONTRACTORS

C. M. Guest & Sons

CONSULTING ENGINEERS

Birk, F. Paul
Black Clawson Company
Dilts Machine Works
Ebasco Services
Frank W. Egan & Co.
Alvin H. Johnson & Co., Inc.
Main, Inc., Chas. T.
The Rust Engrg. Co.
Shartle Bros. Mch. Co.
J. E. Sirrine & Co.
John Waldron Corp.
H. G. Weber & Co., Inc.

CONTINUOUS DIGESTER

Paper & Industrial Appliances

CONTROLLERS

Black Clawson Company
The Brown Instrument Co.

CONTROLS

The Brown Instrument Co.
Johnson Corp.
Foxboro Control Co.
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

CONVERTING MACHINERY

The Bagley & Sewall Company
Egan, Frank W., & Co.
John Waldron Corp.
Dilts Machine Works
Hudson-Sharp Machine Co.

CONVEYORS

Black Clawson Company
Industrial Brownhoist Corp.
Murray, D. J., Mfg. Co.
Ross Engineering Corp., J. O.
Shartle Brothers Mch. Co.
Stephens-Adamson Mfg. Co.

CORES

Elizman Paper Co.
Rodney Hunt Machine Co.
Smith & Winchester Mfg. Co.
Sonoco Products Co.

CORROSION RESISTANT

Amercoat Corporation

COTTON LINTER

Railway Supply & Mfg. Co.

COUPLINGS

The Bagley & Sewall Company
Black Clawson Company
Farrel-Birmingham Co., Inc.
E. D. Jones & Sons Co.
Lovejoy Flexible Coupling Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Thomas Flexible Coupling Co.
Valley Iron Works
Waldron Corp., John

CRANES

Cleveland Crane & Engrg. Co
Industrial Brownhoist Corp.
Whiting Corp.

CURL TESTER

Thwing-Albert Instrument Co

CUTTERS

The Bagley & Sewall Company
Black Clawson Company
Dilts Machine Works
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Harris-Seybold Co.
Jagenberg-Werke Akt. Ges.
Moore & White Co.
Perkins & Son, Inc., B. F.
The Sandy Hill Iron & Brass Works
Taylor, Stiles & Co.
The Smith & Winchester Mfg. Co.

CYLINDER MOULDS

Manchester Machine Co.

CYLINDERS

M. W. Jenkins Sons, Inc.

DAMPENERS

Perkins & Son, Inc., B. F.
Valley Iron Works Co.

DECKLE WEBBING

Williams-Gray Co.

DEFIBRATORS

American Defibrator Co.

DE-INKING

The Cowles Company
Dilts Machine Works
General Dyestuff Corp.
Kinsley Chemical Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

DEINKING CHEMICALS

E. I. Du Pont De Nemours & Co., Inc.
General Dyestuff Corp.
Kinsley Chemical Co.
Nopco Chemical Co.

DE-MINERALIZING EQUIPMENT

Hungerford & Terry, Inc.
The Permutit Company

DEMULSIFIERS

Wyandotte Chemicals Corp., Michigan Alkali Div.

DENSOMETERS

Bunge Pulp & Paper Co.
W. & L. E. Gurley

DESIGN CONSTRUCTION

Ebasco Services

DETERGENTS

American Cyanamid Company Industrial Chemicals Division
Calgon, Inc.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

DEWAXING CHEMICALS

American Cyanamid Company Industrial Chemicals Division
General Dyestuff Corp.
Nopco Chemical Co.

DIFFERENTIAL SCALES

Thwing-Albert Instrument Co.

DIGESTERS

Babcock & Wilcox Co.
Blaw Knox Company
Chicago Bridge & Iron Co.
Combustion Engineering-Superheater, Inc.
Lukenweld
Pusey & Jones Corp.

DIGESTERS (Continued)

Paper & Industrial Appliances

DISPERSING AGENTS

Calgon, Inc.
General Dyestuff Corp.
Monsanto Chemical Company
National Aluminate Corp.
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

DOCTORS

The Bagley & Sewall Company
Bird Machine Company
Black Clawson Company
Downingtown Mfg. Co.
Ledden United Co.
Ledding Engineering Corp.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

DOCTOR BLADES

The Bagley & Sewall Company
Bird Machine Company
Ledding Engrg. Corp.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

DRIERS

The Bagley & Sewall Company
Black Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Lukenweld
The Moore & White Co.
Murray Mfg. Co., D. J.
J. J. Ross Company
Red-Ray Mfg. Co., Inc.
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

DRILLED SUCTION COUCH ROLLS

Manchester Machine Co.

DRILLED SUCTION DRUM ROLLS

Manchester Machine Co.

DRIVES

Allis-Chalmers Mfg. Co.
Appleton Machine Co.
The Bagley & Sewall Company
Bird Machine Co.
Black Clawson Company
Dilts Machine Works
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Farrel-Birmingham Co.
General Electric Company
Gibbs-Brower Company, Inc
Moore & White Co.
Murray, D. J., Mfg. Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Bros. Mch. Co.
Stephens-Adamson Mfg. Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

DRUM WINDERS

Manchester Machine Co.

DRYER DRAINAGE

Stickle Steam Specialties Co.

DRYER ROLL PYROMETER

Thwing-Albert Instrument Co.

DUSTERS

Appleton Machine Co.
Downingtown Mfg. Co.
Frank W. Egan & Co.
M. W. Jenkins Sons, Inc.
E. D. Jones & Son Co.
Moore & White Co.
D. J. Murray Mfg. Co.
John Waldron Corp.

DUSTING BRUSHES

M. W. Jenkins Sons, Inc.

DYESTUFFS

American Cyanamid Company, Calco Chemical Div.
Bunge Pulp & Paper Co.
Ciba Company
E. I. du Pont de Nemours & Co., Inc.
Geigy Co., The
General Dyestuffs Corp.
National Aniline Division, Allied Chemical & Dye Corp.

ELECTRIC HYGROMETER

Thwing-Albert Instrument Co.

EMBOSSING MACHINES

Dilts Machine Works
Egan, Frank W., & Co.
John Waldron Corp.

EMBOSSING ROLLS

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Gibbs-Brower Company, Inc.
Northern Engraving & Mch. Co.
B. F. Perkins & Son, Inc.
John Waldron Corp.
Wheeler Roll Co.

EMULSIFIERS

General Dyestuff Corp.
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

ENZYMES

Rohm & Haas Co.
Vanderbilt Co., R. T.

EVAPORATORS

Davis Engrg. Corp.
Goslin-Birmingham Mfg. Co., Inc.
Murray, D. J., Mfg. Co.
Swenson Evaporator Co., Div. of Whiting Corp.

EXPANDERS

Mount Hope Machinery Co.

FANS

General Electric Co.
B. F. Perkins & Son, Inc.
Ross Engineering Co., J. O.

FEEDERS

Hoffl Company, Inc.
Merrick Scale Mfg. Co.
The Permutit Company
Stephens-Adamson Mfg. Co.

FELTS

Appleton Woolen Mills
Asten-Hill Mfg. Co.
Draper Bros. Corp.
Huyck & Son, F. C.
Lockport Felt Co., Inc.
Morey Paper Mill Supply Co.
Shuler & Benninghofen
Waterbury Felt Co.
Waterbury, H., & Sons Co.
Williams-Gray Co.

FELT CLEANERS

Calgon, Inc.
General Dyestuff Corp.
Nopco Chemical Co.

FELT CONDITIONERS

Bird Machine Co.
The Sandy Hill Iron & Brass Works

FELT GUIDES

Black Clawson Company
Frank W. Egan & Co.
Gilbert & Nash Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

FILLERS
American Cyanamid Company, Industrial Chemicals Division
A. M. Meincke & Son, Inc.
Vanderbilt Co., R. T.
Wyandotte Chemicals Corp., Michigan Alkali Div.

FILTERS
Bird Machine Company
J. M. Huber Corp.
Hungerford & Terry, Inc.
Johnson Corp.
Moore & White Co.
J. O. Ross Engrg. Corp.
The Sandy Hill Iron & Brass Works
Walworth Company

FITTINGS
The Bagley & Sewall Company
Crane Company
Shartle Bros. Mch. Co.
Walworth Company

FLEXIBLE COUPLINGS
Egan, Frank W., & Co.
Lovejoy Flexible Coupling Co.
John Waldron Corp.

FLOORING, GRATING AND TREADS
The Goodyear Tire & Rubber Company
Norton Co.

FLOW BOXES, STAINLESS-CLAD
Lukens Steel Co.
The Sandy Hill Iron & Brass Works

FORK LIFT TRUCKS
Clark Equipment Company Industrial Truck Division
Towmotor Corp.

FORMATION TESTERS
Thwing-Albert Instrument Co.
Williams Apparatus Co., Inc.

FORMING MACHINES
Black Clawson Company
Downingtown Mfg. Co.
The Moore & White Co.
Noble & Wood Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

FRAYEDNESS TESTERS
Testing Machines, Inc.
Williams Apparatus Co.

FURNACES
Hoeft Company, Inc.

GASKETS
The Goodyear Tire & Rubber Company

GEARS
The Bagley & Sewall Company
Black Clawson Company
De Laval Steam Turbine Co.
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
E. D. Jones & Sons Co.
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Westinghouse Electric Corp.
Western Gear Works

GRAPPLES
Blaw-Knox Company

GRINDERS
Carthage Machine Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Labdell Co.
Norton Company
Samuel C. Rogers and Company
The Sandy Hill Iron & Brass Works

GRINDING WHEELS
Norton Company

GUIDES
The Bagley & Sewall Company
Egan, Frank W., & Co.
Gilbert & Nash Co.
The Moore & White Co.
Mount Hope Machinery Co.
John Waldron Corp.

GUMMING MACHINES
Dilts Machine Works
Egan, Frank W. & Co.
The Sandy Hill Iron & Brass Works

GUMS
National Starch Products, Inc.
Stein-Hall Co., Inc.

HEAT EXCHANGERS AND RECOVERY SYSTEMS
Stickle Steam Specialties Co.
Westinghouse Electric Corp.

HEATING, VENTILATING & AIR CONDITIONING
The Appleton Machine Co.
E. D. Jones & Sons Co.
General Electric Co.
D. J. Murray Mfg. Co.
Red-Ray Mfg. Co., Inc.
Ross Engineering Corp., J. O.
Stickle Steam Specialties Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

HOSE (Air, Water, Suction, etc.)
The Goodyear Tire & Rubber Company

HUMECTANTS
Aktivin Division, Heyden Chemical Corp.
Nopco Chemical Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

IMPREGNANTS
American Cyanamid Company Industrial Chemicals Division
B. F. Goodrich Chemical Co.

INDENTING MACHINES
Dilts Machine Works

INDUSTRIAL TRACTORS
Clark Equipment Company Industrial Truck Division
Towmotor Corp.

INKOMETER
Thwing-Albert Instrument Co.

INSTRUMENTS, TESTING AND MEASURING
Beckman Instruments, Inc.
Brown Instrument Co.
Bunge Pulp & Paper Co.
Cambridge Instrument Co.
General Electric Company
W. & L. E. Gurley
B. F. Perkins & Son
Photovolt Corp.
Taylor Instrument Cos.
Testing Machines, Inc.
Thwing-Albert Instrument Co.
Williams Apparatus Co.

JOINTS
The Bagley & Sewall Company
Johnson Corp.
Lovejoy Flexible Coupling Co.
Shartle Bros. Mch. Co.

JORDAN FILLINGS
Appleton Machine Co.
Bahr Brothers Mfg. Co.
E. D. Jones & Sons Co.
Shartle Bros. Mch. Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

KNIVES
Black Clawson Company
Dilts Machine Works, Inc.
Hamblet Machine Co.
Hepworstall Company
E. D. Jones & Sons Co.
The Moore & White Co.
Simons Werdon White Co.
Taylor Stiles & Co.
Valley Iron Works Co.

KRAFT WRAPPING PAPERS
Canadian Newsprint Supply Co.

LABORATORY CORRUGATOR
Thwing-Albert Instrument Co.

LABORATORY EQUIPMENT
Appleton Machine Co.
Bauer Brothers Co.
Beckman Instruments, Inc.
Bird Machine Company
Dilts Machine Works
W. & L. E. Gurley
Egan, Frank W., & Co.
E. D. Jones & Sons Co.
Taylor Instrument Companies
Testing Machines, Inc.
Valley Iron Works Co.
John Waldron Corp.
Williams Apparatus Co., Inc.

LAMINATING MACHINES
The Bagley & Sewall Company
Dilts Machine Works
Egan, Frank W., & Co.
John Waldron Corp.

LAY BOYS
Dilts Machine Works
Gibbs-Brower Company, Inc.
Hamblet Machine Co.
Moore & White Co.

LIFT TRUCKS
Clark Equipment Company Industrial Truck Division

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Railway Supply & Mfg. Co.

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POST CARD
COVER
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The Texas Company
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Dilts Machine Works (Kohler Systems)

MATERIALS HANDLING
Clark Equipment Company
Industrial Truck Division
Cleveland Crane & Engrg. Co.
Dilts Machine Works
Shartle Bros. Mch. Co.
Stephens-Adamson Mfg. Co.
The Wellman Engrg. Co.

MICROMETERS & CALIPERS
Farrel-Birmingham Co.
Lobdell Co.
Stephens-Adamson Mfg. Co.
Testing Machines, Inc.

MICRO-CRYSTALLINE WAXES
Bareco Oil Co.
Bunge Pulp & Paper Co.
Moore & Munger
Sun Oil Company

MOISTURE CONTENT CONTROL
Cambridge Instrument Co.
Stickle Steam Specialties Co.
Williams Apparatus Co., Inc.

MOTORS AND GENERATORS
Allis-Chalmers Mfg. Co.
Fairbanks, Morse & Co.
General Electric Company
Reliance Electric & Engrg. Co.

NEWSPRINT
Bunge Pulp & Paper Co.
Canadian Newsprint Supply Co.

NICKEL AND NICKEL ALLOYS
The International Nickel Co.

PACKING BOXES
Johnson Corporation
The Moore & White Co.
Shartle Brothers Machine Co.
Clark Equipment Company
Industrial Truck Division

PALLET TRUCKS
Clark Equipment Company
Industrial Truck Division

PAPER MACHINE DRIVES
The Bagley & Sewall Company
Manchester Machine Co.

PAPER MACHINES
The Bagley & Sewall Company
Bagley & Sewall Co.
Black Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Lakeneweld
Moore & White Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

PAPER MACHINE SLICES
Black Clawson Company
E. D. Jones & Sons Co.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.

PAPER TUBE MACHINERY
Dietz Machine Works
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson Sharp Machine Co.
Jagenberg-Werke Akt. Ges.
Langston Co., Samuel M.

PARAFFINE WAXES
Moore & Munger
Sun Oil Company

PARAFFIN WAX EMULSIONS
Nopco Chemical Co.

PASTING MACHINES
Black Clawson Company
Dilts Machine Wks.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Murray, D. J., Mfg. Co.
Moore & White Co.
Potdevin Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

PEBBLE MILLS
F. L. Smidth & Co.

PERFORATED METAL
Allis-Chalmers Mfg. Co.

pH METERS
Cambridge Instrument Co.
Thwing-Albert Instrument Co.

PIPE
Armco Drainage & Metal Products, Inc.
Babcock & Wilcox Co.
Crane Company
Grinnell Company
Michigan Steel Casting Co.
National Tube Co.
Walworth Company

PIPE FITTINGS
Armco Drainage & Metal Products, Inc.
Crane Company
Grinnell Company
Michigan Steel Casting Co.
Walworth Co.

PITCH CONTROL
American Cyanamid Company
Industrial Chemicals Division
General Dyestuff Corp.
Monsanto Chemical Company
National Aluminate Corp.
Nopco Chemical Co.
Rohm & Haas Co.

PLASTICIZERS
American Cyanamid Company
Industrial Chemicals Division
Aktivin Division, Heyden Chemical Corp.
B. F. Goodrich Chemical Co.
Naugatuck Chemical
Division of U. S. Rubber Co.
Nopco Chemical Co.

PLATERS
Gibbs-Brower Company, Inc.
Perkins & Son, Inc., B. F.

PLATES
Armco Steel Corp.
Babcock & Wilcox Co.
J. O. Ross Engrg. Corp.
Lukenweld Division
Lukens Steel Company
Timken Roller Bearing Co

PLUGS
The Appleton Machine Co.
Black Clawson Company
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.

POPE TYPE REELS
Egan, Frank W., & Co.
Manchester Machine Co.

PRECISION SAMPLE CUTTER
Testing Machines, Inc.
Thwing-Albert Instrument Co.

PRESERVATIVES
E. I. du Pont de Nemours & Co
General Dyestuff Corp.

PRESSURE VESSELS
Chicago Bridge & Iron Co.
Combustion Engineering-Superheater, Inc.

PRESSES
Black Clawson Company
Dietz Machine Works
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Machine Co.
The Moore & White Co.
Potdevin Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.
Waldron Corp., John
H. G. Weber & Co., Inc.
Williams Apparatus Co.

PULLEYS
Lovejoy Flexible Coupling Co.

PULP CLASSIFIER
The Bauer Bros. Co.
Thwing-Albert Instrument Co.

PULP CLEANERS
Nichols Engrg. & Research Corp.

PULP STOCK VALVES
Crane Company
Record Fdy. & Mach. Co.
Shartle Brothers Machine Co.

PULPERS
Apmew, Inc.
Bauer Brothers Co.
The Cowles Company
Dilts Machine Works
E. D. Jones & Sons Co.
Morden Machines Co.
Shartle Brothers Machine Co.

PULPS
Brown Company
Bunge Pulp & Paper Co.
Gottesman & Co., Inc.
Lyddon & Co. (America), Inc
Parsons & Whittemore, Inc.
Perkins-Goodwin Co.
Price & Pierce, Ltd.
Pulp and Paper Trading Co.
Restigouche Co., Ltd.

PULPSTONES
Norton Company

PULP TESTERS
Paper and Pulp Testing Laboratories
Williams Apparatus Co., Inc.

PULVERIZING MILLS
Combustion Engineering-Superheater, Inc.
F. L. Smidth & Co.

PUMPS
American Paper Machy. & Engrg. Works, Inc.
Allis-Chalmers Mfg. Co.
The Bagley & Sewall Company
Black Clawson Company
Buffalo Pumps, Inc.
DeLaval Steam Turbine Co.
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Gibbs-Brower Company, Inc.
Byron Jackson Co.
Johnson Corp.
Moore & White Co.
Nash Engineering Co.
Roots Connersville Blower Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

RADIANT BURNERS
Red-Ray Mfg. Co., Inc.

RAG COOKING PROCESSES
The Kinsley Chemical Company
General Dyestuff Corp.
Rohm & Haas Co.

RAG CUTTERS
Gibbs-Brower Company, Inc.
B. F. Perkins & Son, Inc.
Taylor-Stiles & Co.

RECAUSTICIZING PLANTS
The Dorr Company

RECOVERY SYSTEMS
Babcock & Wilcox Co.
Chicago Bridge & Iron Co.
Combustion Engineering-Superheater, Inc.
Moore & White Co.
D. J. Murray Mfg. Co.
Pusey & Jones Corp.
Ross Engineering Corp., J. O.
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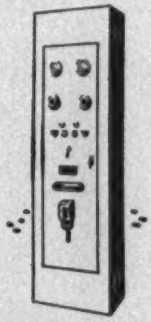
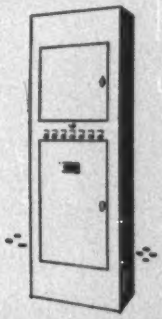
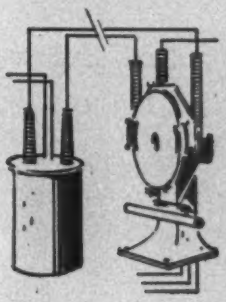


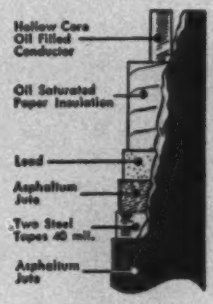
RECTIFIER SWITCHBOARDS—are of the Enclosed Cubicle type with flush-mounted meters, push buttons, selector switches, and indicating lights. The cabinet door and rectifier control circuit are interlocked. Rectifier and transformer contactors, instrument transformers, tap switches, terminal blocks and other auxiliaries are mounted inside the switchboard cabinet.



RAPPER AND POWER PANELS—are of the same external appearance as rectifier switchboards and can be installed beside rectifier switchboards to form a uniform and continuous switchboard installation. The cabinet is divided into two compartments—one containing AB breakers for control of all individual rectifier and signal circuits—the other containing all rapper controls and timers.



RECTIFIERS—for either full or half wave rectification. Mechanical rectifiers of the solid disc type are supplied with Radio Interference Correctors and Inductive Type Automatic Polarity devices. The Automatic polarity device has no commutator or brushes contacting high speed rotating parts. High voltage switch gear with interlocking control units is available.



HIGH VOLTAGE CONNECTIONS—between the rectifiers and the COTTRELL may be either special high voltage petrolatum-filled lead and steel-covered cable with pothead terminal connections, or of rod-and-bus-duct construction.

Watch for the next in this series which outlines the various* COTTRELL *electrode systems available from Western Precipitation Corporation.

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Western Precipitation can design COTTRELLS to operate at any desired efficiency, for any capacity, to collect virtually any solid or liquid suspended in a gas, whether hot or cold.

Do you have these helpful COTTRELL *booklets?* This literature answers many questions concerning COTTRELL equipment. Free copies will gladly be sent those interested. Ask for booklets C101 and C105.

PAPER TRADE JOURNAL

How TIMKEN® bearings help a plug keep plugging

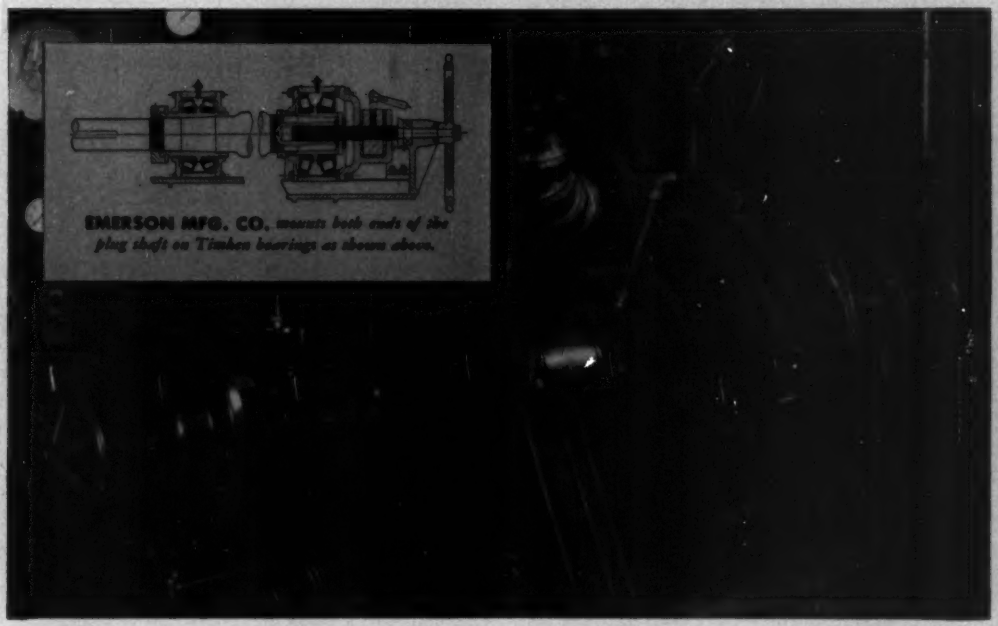
THE Emerson Manufacturing Company of Lawrence, Mass., mounts the plug shaft of its Jordan engines on Timken® tapered roller bearings to insure positive positioning of the plug. Timken bearings carry the heavy loads on the plug and prevent any deflection or end-movement which might upset the minute adjustment between plug and shell.

As a result, the stock is refined more effectively and cost of repair and maintenance on the machine is minimized.

Because of line contact between rollers and races, Timken bearings have extra load-carrying capacity. True rolling motion and incredibly smooth surface finish reduces friction to a minimum. Because Timken bearings permit tighter closures, lubricant is retained . . . dirt and moisture kept out. And the tapered construction of Timken bearings takes both radial and thrust loads in any combination.

No other bearing gives you all the advantages you get with Timken tapered roller bearings. Insist on them in all the machinery you buy or build. Look for the trade-mark "Timken" on every bearing. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

This symbol on a product means its bearings are the best.



DESIGN LEADERSHIP

The first Timken tapered roller bearing was produced in 1898. Since then the one-piece multiple perforated cage, wide area contact between roll ends and ribs, and every other important tapered roller bearing improvement have been introduced by The Timken Roller Bearing Company.

The Timken Company leads in: 1. advanced design; 2. precision manufacture; 3. rigid quality control; 4. special analysis steels.

TIMKEN

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TAPERED ROLLER BEARINGS

NOT JUST A BALL ○ NOT JUST A ROLLER ⬭ THE TIMKEN TAPERED ROLLER ⬭ BEARING TAKES RADIAL ⊖ AND THRUST →⊖← LOADS OR ANY COMBINATION →✳←